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- Support Intel LANDesk Client Manager

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- Pentium Processor-based, AT Form Factor
- Intel 430TX PCIset supports ACPI
- Support Ultra DMA mode, up to 33 MBbytes/sec
- 32-bit PCI x 4 and 16-bit ISA x 3
- Support CPU voltages Auto-detect

Hot-579

- Pentium Processor-based, AT Form Factor
- VIA VT82C585V/VT82C587V System Controller, VT82C587V
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- Support Ultra DMA mode, up to 33 MBbytes/sec
- 32-bit PCI x 4 and 16-bit ISA x 3
- Support CPU voltages Auto-detect

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A Fresh Technology Driver...

Everyone is talking about networking, but do you really know which network product can save the cost and minimize the troubles of your LAN system?

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Why Price Is Not Enough

When I was a little girl, I remember sitting in the front pew in church, squirming uncomfortably as the minister, who also happened to be my father, recounted the personal details of my young life to the congregation in the interests of a segue to his point.

In light of that painful memory, I can sympathize with my spouse, as I'm about to publicly accuse how he didn't get the best price on his most recent technology purchase. Indeed, his goal was to buy a laser printer for his company, and he set out to look at many brands and models to try to find the right printer for his business needs — and, of course, to get a good deal!

However, he was very impressed with one reseller who spent considerable time with him, and addressed his questions and concerns about printers in a knowledgeable and helpful manner. So much so, that even though another store was selling the exact printer at a cheaper price, my husband decided to pay the extra money in the interests of the exceptional service rendered.

Service is a big part of the quality of any product or business. Behavior such as my spouse's ties into the equation *Value = Quality - Price*, proposed by futurist Richard Wurzel, author of "The Next 20 Years Of Your Life." He was guest speaker at a recent StorageTek road tour (The tour featured the Canadian-made Rex automated daily back-up solution, aimed particularly at small businesses and mobile workers, starting at \$35 per month.) As more companies are realizing the role of product quality in value, Wurzel said, quality becomes much more relevant — now you've got it.

Indeed, he quoted author Tom Cranford: "Your competition is anyone who raises the expectations of your customer. Your customer connects your transactions with transactions with Disney, FedEx and L.L. Bean, not just the company across the street that happens to be in the same industry." Then, Anne de Groot, a futurist with Royal Dutch Shell: "Learning faster than your competitors is the only sustainable competitive advantage in an environment of rapid change and innovation."

This month, our Letters section (page 10) features a letter from a Canadian reseller upset at being forced to compete directly with some of his distributors, as

government bids. Because that reseller wasn't prepared to go completely public with his complaint, we agreed to publish the letter without naming him. However, channel conflict is one of those issues that just isn't going away. Some industry watchers think the level of conflict is actually worsening, due to the advent of Internet sites, which makes the "street" option even more appealing for some manufacturers and distributors.

Just as you appreciate customer loyalty, and hopefully reward it, it's up to you to express loyalty to those among your suppliers that obviously have your interests in mind, as well as their own. If you're feeling marked competition from your very supplier, there is a real problem with somebody's business model. The upshot is a competitive market means you can express your appreciation of your supplier's approach to business with your fan and your pocketbook.

Having said that, however, it's possible to get overly hung up on price. If price is the only way differentiating factor in your business — sorry.

This issue, we're running a special feature on distribution. Please see "Distributors: A precious proposition?" (page 34) for a discussion on how Canadian distributors are trying to both specialize and diversify their offerings in the never-ending battle for market-share, revenue and profit.

Technology-wise, low-cost ink-jets are hitting the market with fabulous capabilities when it comes to both black-and-white and color printing. See Lab Test (page 40) for our top picks among the sub-\$500 ink-jet printers. Also, check out the special report on Networking by Associate Editor Jeff Evans for an overview of the market and opportunities, particularly in the light of today's Internet reality. (Please see "Cover The Door," page 22.)

And for an analysis of the tough desktop publishing business, don't miss "Who Will Save Desktop Publishing?" (page 30) by contributor Geoff Wheenwright.

Enjoy the issue.

What do you think of our coverage, and which technology or market areas concern you? Drop me a line at grace@saturn.ca, 108.

Grace Conselman
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Canadian Computer Wholesaler

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Professional business ethics and integrity

For some time now I have observed what I would consider "unfair business practice" and lack of ethics from some distributors.

Like most resellers and VARs, some of our business focus is on government tenders. Occasionally we turn towards (certain distributors) to provide us with a quote on these tenders. I was quite surprised to see that, directly on those same offers, I have to ask "What are the chances for any of us to ever succeed to win a tender that has been bid on by a distributor?"

Is there a common practice?

What's interesting is the fact that even the Industry Canada Competition Bureau does not see this situation as being illegal. A worker at the Competition Bureau did recognize that a distributor would have an unfair advantage over a VAR/reseller but there are no laws preventing such actions unless there is proof of collusion.

Am I the only one that thinks that this is unfair business practice?

How many more of us feel victimized by this situation?

Canadian reseller

(Name withheld from publication at request)

Support the underdogs!

I like things about both browsers, however the right clickable "Send Page" in Netscape has Internet Explorer 4.0 beat by a long shot.

I send information to my clients whose e-mail addresses I have in my database. They appreciate the articles I send them that they may otherwise have missed.

Managers are not good! Even though I am a registered Microsoft reseller I would have to pay Microsoft in order to help a client with errors messages in the Win 95 operating system! On the other hand as a registered Comel reseller of WordPerfect 7.0, I have free access to help!

We need more underdogs and fewer "dogs!"

Support alternative software!

Charles Pichot consultant
Comptechsoft, Melrose, Ont.
cpichot@rwest.com

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Letters To The Editor

We welcome your letters on industry issues and concerns, as well as your comments on our magazine.

We reserve the right to edit your contributions for length and clarity.

Please write to The Editor via e-mail at www@top.ca, or fax (604) 688-2886.

Wired To The Web**Which Microsoft products are Year 2000-ready?**

Visit the Product Guide section at <http://www.microsoft.com/ym2000> to look up Microsoft products for their Year 2000-readiness. Products rated as not compliant include: Word 6.0 for DOS, Access 2.0 and Office 4.0, Professional Edition. Windows 3.1 is considered "untested" with minor issues. Visit the site for the details.

Latest Intel 440BX Chipset, supports CPU up to 550MHz, 100 MHz Bus clock and more...

The EPIX EP-8100A-M, also named as **BAA**, is based on the Intel 440BX chipset, a PCI set offering 100MHz Bus Clock, supporting single Slot-1 Pentium® II or Deschutes CPUs operating at 233-550 MHz. **BAA** also combines with many highly advanced features, such as the Keyboard Power-On (KBPO), Unified System Diagnostic Manager (USDM), Easy Setting Single Jumper (ESSJ) and much more!



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LX6

- CPU SOFT MENU™, Jumpless Technology
- Supports 80, 75* and 63MHz CPU external clock speeds
- Supports Pentium® II 233 - 333 MHz processor cartridge
- Intel 440LX chipset supports Ultra DMA/33 IDE protocol, ACPI and AGP 66MHz/133MHz (Sideband) 3.3V device
- Four 168-pin DMM sockets for 3.3V unbuffered DRAM modules support SDRAM, EDO DRAM
- Supports up to 512MB MAX. 08, 16, 32, 64, 128MB EDD or SDRAM and ECC function
- ATX Form factor, Four PCI slots, Three ISA slots and one AGP slot



AHE

- CPU SOFT MENU™, Jumpless Technology
- Supports 80, 75* and 63MHz CPU external clock speeds
- Supports Pentium® II 233 - 300 MHz processor cartridge
- Intel 440LX chipset supports Ultra DMA/33 IDE protocol, ACPI, and AGP 66MHz/133MHz (Sideband) 3.3V device
- Three 168-pin DMM sockets for 3.3V unbuffered DRAM modules support SDRAM, EDO DRAM
- Supports up to 384MB MAX. 08, 16, 32, 64, 128MB EDD or SDRAM and ECC function
- ATX form factor, One AGP slot, Three PCI slots and Two ISA slots



IT5A

- Supports 50, 55, 60, 66, 75*, 80* 100MHz CPU external clock speeds
- Supports Pentium® processors and Pentium® processors with MMX™ technology
- AMD K5™ /K6™ /K6-3D, Cyrix 6x86™/6x86SL™ /6x86MX™, IDT WinChip C6 processors
- AL Aladdin 5 chipset supports Ultra DMA/33 IDE protocol, ACPI and AGP 66/133 MHz (Sideband) 3.3V devices
- Two 168-pin DMM sockets for 3.3V unbuffered DRAM modules support SDRAM, EDO DRAM up to 256MB
- ATX form factor, Three PCI slots, Two ISA slots and One AGP slot
- PC97 Compliant



AX5

- CPU SOFT MENU™, Jumpless Technology
- Supports 80, 65, 60, 66, 75* 85MHz CPU external clock speeds
- Supports Pentium® processors and Pentium® processors with MMX™ technology
- AMD K5™ /K6™ Cyrix 6x86™/6x86SL™ /6x86MX™, IDT WinChip C6 processors
- Intel 430 TX chipset supports Ultra DMA/33 IDE protocol, ACPI and Windows 95 soft off
- Three 168-pin DMM sockets for 3.3V unbuffered DRAM modules support SDRAM, EDO DRAM, and Four 72-pin SIMM sockets support EDO & FPM modules, up to 256MB
- ATX form factor, Four ISA slots, four PCI slots



TX5

- CPU SOFT MENU™, Jumpless Technology
- CPU Monitoring Management (EZCA)
- Supports 80, 60, 66, 75*, 83MHz CPU external clock speeds
- Supports Pentium® processors and Pentium® processors with MMX™ technology
- AMD K5™ /K6™, Cyrix 6x86™/6x86SL™ /6x86MX™, IDT WinChip C6 processors
- Intel 430 TX chipset supports Ultra DMA/33 IDE protocol, ACPI
- Two 168-pin DMM sockets for 3.3V unbuffered DRAM modules support SDRAM, EDO DRAM, and Four 72-pin SIMM sockets support EDO & FPM modules, up to 256MB
- Baby AT form factor, Three ISA slots, Four PCI slots



PX5

- CPU SOFT MENU™, Jumpless Technology
- Supports 50, 55, 60, 66, 75*, 83MHz CPU external clock speeds
- Supports Pentium® processors and Pentium® processors with MMX™ technology
- AMD K5™ /K6™, Cyrix 6x86™/6x86SL™ /6x86MX™, IDT WinChip C6 processors
- Intel 430 TX chipset supports Ultra DMA/33 IDE protocol, ACPI
- Two 168-pin DMM sockets for 3.3V unbuffered DRAM modules support SDRAM, EDO DRAM, and Four 72-pin SIMM sockets support EDO & FPM modules, up to 256MB
- Baby AT form factor, Four ISA slots, Four PCI slots

"THE FUTURE TREND OF MOTHERBOARD THE NEW

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BX6

- CPU SOFT MENU™II - Jumperless Technology
- Supports Pentium® II 350 - 400 MHz processor cartridge (Based on 100MHz clock).Pentium® II 233 - 333 MHz processor cartridge (Based on 66MHz clock).
- Intel 440BX chipset supports Ultra DMA/33 IDE protocol,AGP 66MHz/133MHz (Sideband 3.3V) device
- Four 168 pin DIMM sockets support SDRAM module
- Supports up to 512MB MAX. 8, 16, 32, 64, 128MB SDRAM and ECC function
- ATX Form factor, One AGP slot,Four PCI slots and Three ISA slots

THE NEW SOFT MENU™ II :

It is time to upgrade again and this motherboard is the perfect basis for your whole system. The ABIT BX6 comes with Intel's new high-end chipset announced on April 16 to support the new Pentium® II 350 MHz and 400 MHz CPU's. Better yet, this motherboard is backwards compatible to support all Pentium® II CPU's currently on the market. That means that you can use your current Pentium® II CPU with the BX6 and get a performance boost from all the latest features of Intel's 440BX chipset. Furthermore, you can benefit from ABIT's new Soft Menu™ II which allows for the first time ever, voltage adjustment for Pentium® II CPU's, plus faster boot times compared to the original Soft Menu™, and on-board hardware temperature monitoring.

*Bus speeds of 75, 100, 112, and 133 MHz CPU bus speeds are supported but not guaranteed due to the CPU and chipset speeds.



ParamTech

COMPUTER!





Windows 98 goes public on June 25, says Microsoft

Microsoft Corp. says it will make the next generation of its desktop operating system, Windows 98, available to the public on June 25.

More than 150,000 consumers worldwide have been participating in the Consumer Beta Program for the operating system.

Microsoft says the new product opens up applications 36 per cent quicker on average, and says games and shutting down the PC are up to five times quicker than with Windows 95. Moreover, Microsoft claims the operating system uses hard drive space more efficiently — and on average, users should expect to have 28 per cent more free disk space.

The upgrade version for users of Windows 95 or Windows 3.1 is \$149.

Tech Data buys Computer 2000 for more European coverage

Expanding its European presence, distributor Tech Data Corp. has purchased a majority interest in Computer 2000, which has more than 40 distribution subsidiaries in 30 countries.

Steven Raymond, Tech Data's chairman and CEO said this was a big step in Tech Data's European expansion plan. "We've committed to participating in the European market," he said.

While the purchase won't have a direct impact on Tech Data Canada Inc. or Canadian resellers, Raymond said larger Canadian resellers selling into Europe may be attracted by a working with a distributor that can provide support "on both sides of the market place."

Tech Data Corp. is doubling its revenues with this acquisition. The two companies expect to achieve revenues of US\$15 billion in this calendar year. Haynehead and the merged company should be able to achieve economies of scale, with more purchasing power and more money to invest in the overall information technology infrastructure.

Motorola MVME147 SBC celebrates one decade!

The Motorola Computer Group has announced the 10th anniversary of the MVME147 single board computer (SBC), necessary for such applications as internetworking equipment, diagnostic instrumentation, process control and material handling equipment.

The MVME147 and the Delta Series VME systems have been used for Unix and real time VME computers.

Motorola says significant enhancements have been made to the manufacturing process



for the MVME147 over the last decade, such as the migration from a through-hole assembly with many discrete devices to a surface-mount design with ASICs consolidating much of the onboard logic.

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Compaq Canada reports revenue and unit growth

Compaq Canada Inc. says its Q1 unit sales are up 64 per cent over last year, and revenues have increased 32 per cent. "Compaq Canada had a sensational quarter on all fronts. We're looking pretty bullish," said John Boyle, director of marketing.

The Canadian subsidiary earned \$1.64 billion in 1997. Twenty per cent of units shipped in the first quarter of this year were consumer-oriented products, which is an increase, said Boyle.

NEC Versa survives bomb squad

Never mind checking one's notebook. How about blowing it up? The Computer Systems Division of Packard Bell NEC Inc. (PB NEC) announced that one of its Versa notebook computers has survived detonation by a bomb squad, and continues to function, despite damage to its screen and external case.

According to NEC, an employee at the Rochester, N.Y. Army National Guard armory spotted an unmarked, heavily taped package in the parking lot. As a precaution, police called in the bomb squad to investigate the box. An examination by a remote-controlled robot revealed that the box contained wires and cables, so the bomb squad decided to detonate the package after clearing the area. The small blast tore the box apart and revealed a Versa notebook computer and some peripherals, which had been reported stolen from Joseph Seigler earlier. The speaker, CD-ROM drive and battery pack were damaged, as were the top panel and screen of the notebook, which took the brunt of the blast.

Despite this damage, the Versa, which was

originally used for map plotting, flight planning and conducting meteorological research, continued to function, without any data loss, damage to the processor, hard drive or memory slots, said NEC.

NEC said following the blast, the owner hooked up the damaged machine to a VGA monitor, and sent an e-mail to the PB NEC customer service department. "You make one rugged machine," wrote Sogita Saito, facilities manager at the Army National Guard. "I hooked up a VGA monitor to the unchanged monitor port and flipped the power switch. I expected it to start smoking and had a fire extinguisher ready, but instead the password screen appeared."

Gordon Neff, national product manager, strategic accounts for Packard Bell NEC Canada, said: "This incident demonstrates the level of quality in our products, however, we don't recommend that customers try this at home."

At press time, the theft of the machine was still under investigation. **SP**

Contact: The Editor

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Domtar tells suppliers to beat millennium bug or else

(NB) — Canadian pulp and paper giant Domtar Ltd. has sent a strongly worded ultimatum to hundreds of its suppliers advising them to guarantee their computers are rid of the so-called "millennium bug," or face the loss of Domtar business.

The ultimatum calls for guarantees from each supplier that not only will their computers be able to provide products and services "without interruption or delay" before, during and after "calendar year 2000," but that their suppliers will make such assurances.

CANARIE hands out technology industry awards

(NB) — Five Canadians were honored in the 1998 National IWAY Awards, given out in Toronto recently by Canadian Network for the Advancement of Research, Industry and Education (CANARIE) Inc. and the Canadian Advanced Technology Association (CAT) and sponsored by the Royal Bank of Canada.

This year's winners were: Jean-François Ménard, president of CIFRA Medical Inc. in Ste-Foy, Que., for new-technology development; Doug Hall, director general of Industry Canada's Information Highway

Application Branch, for application of technology; Dr. Paul Patterson, senior shareholder in management technology change at University College of Cape Breton in Sydney, N.S., for community service; Randy Munden, president and chief executive of Munden Communications Inc. in Edmonton, for adaptive technologies; and Lionel Hurbans, chairman of Envirocom Communications Inc. in Mount-Royal, Que., for public leadership.



Skills shortage makes Year 2000 scarier!

(NB) — Even those organizations that woke up to the year 2000 problem in time may face a big obstacle in trying to correct it: people. There simply are not enough people in Canada with the necessary skills, and there is little time to train more.

How big is the problem? "In a word," says Vince Formstall, president of Decisive Technology Management in Toronto, "all big firms, B2B." Formstall's firm places information technology professionals and provides IT asset management services. He said that the issue for many organizations will not be how much money they are willing to spend to fix their year 2000 problems, but whether they can get the necessary expertise at any price.

Joe Baeris, executive director of the Global Millennium Foundation in Ottawa, said many large organizations have yet to wake up to the year 2000 problem. As they do, the demand for the skills needed to fix it will only grow. Already the cost of year 2000 expertise is going up rapidly, said Formstall. "They are going to be paying 50 per cent more this year than they would have paid last year."



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Microsoft Canada will reward software retailers

Microsoft Canada is seeking nominations of software retailers for the Microsoft Canada Galileo Award. According to Microsoft, the award is designed to recognize leadership in the art and science of software retailing.

Under the nomination process, consumers are asked to rate retailers on a scale of one to five in the following categories:

- professional staff,

- knowledgeable staff,
- hours of operation,
- customer service,
- product selection,
- store ambiance, and,
- overall shopping experience.

Awards will be presented in three categories: large chain, small chain and single store. Nomination forms are available at: <http://www.microsoft.com/canada/retail>

HP helps resellers support outsourcing

Hewlett-Packard (Canada) Ltd. has announced a reinforced program to support resellers' efforts to deliver cost-effective and profitable services to owners of HP 9000 PCs, designed for small- and medium-sized computers without information technology staff.

The new HP 9000 Reseller Support Services program is designed to support resellers as "virtual" IT managers for companies without IT staffs, says HP.

The program includes a free pcAnywhere Remote Support Tool to let resellers troubleshoot and resolve hardware and software problems anywhere through a modem or LAN; new reseller support services, including training programs, access to technical information and a dedicated telephone support number for resellers to get up-to-date product information; and an expanded line of aggressively priced HP Value Packs and accessories including network cards, memory and multimedia components. **BB**

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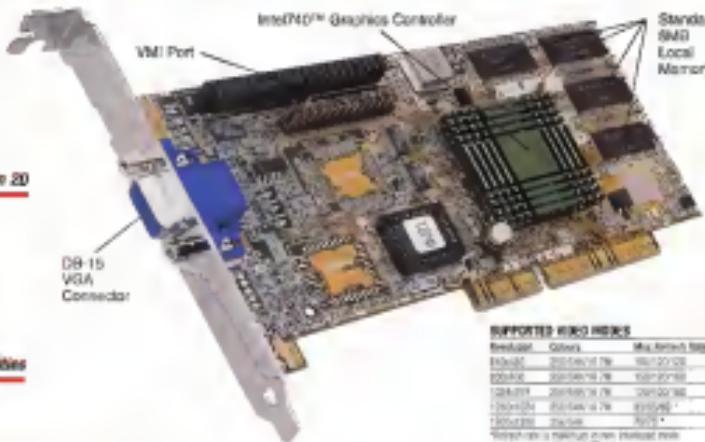
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640x480	True Colour	160Hz

*Refresh rate is measured when maximum mode is measured in Hz. 160Hz

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Searching for value-add in a wired, commodified market



By David Tanaka

The Internet will have a greater impact than the telephone, and electronic commerce is redefining the supply chain — involving customer with supplier as never before. That's the considered opinion of both Tony Reiter, director of strategic technology services for Price Waterhouse's Global Technology Centre in Menlo Park, Calif., and Michael Culykiss, lead partner for the firm's technology industry practice in Vancouver, who recently presented a "Technology Forecast 1998" report.

Reiter said interest in Internet commerce is high. There's been spectacular growth, as sales are doubling every four months. He

noted. He said even optimistic forecasts have been increasing their projections upward by 44 per cent every six months.

As a business-to-business practice, e-commerce is nearly there. International Data Corp. estimates that by 2003, the value of Internet-based purchases will be more than US\$545 billion, of which nearly US\$340 billion will be business-to-business purchases.

In the consumer market, several "inhibitors" still exist. These include the perceived lack of security, quality of telecoms services, and the so-called "last mile bandwidth to the home."

The Last Mile?

The last mile issue is being explored on a num-

ber of fronts, including fibre optics to the home, ADSL and its variations, cable modems, traditional satellite technologies like DirectPC and newer satellite-based communication systems like Iridium or Telesat's "Internet in the sky."

Solving the last mile issue is the key to creating the critical mass necessary for consumer e-commerce to be viable. Reiter said 25 percent of the population on line represents the critical mass, and in the U.S., that point may be reached this year. Canada should have about 20 per cent on-line by the end of this year, although Japan won't reach that level until 1999, and some parts of Europe, not until beyond 2000. However, it's just a matter of time, and as companies gear up to do business on the Internet, the organisational focus must

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change from a "product not" orientation to a "customer in" one, said Reiter.

Web Commodification

Internet commerce will see the commodification of transaction-based exchanges, so the viability of e-commerce-based companies will rely on value-added services, not in the transaction itself.

This reality is already having an impact on the way some companies conduct their business. With competition from other sellers, and the huge amounts of information readily available to consumers about flights and prices, airline ticket agents, for example, don't make much money selling a seat. They therefore must rely on providing services that consumers are willing to pay for.

But even without the influence of e-commerce, the commodification of PC products is a well-known phenomenon, and is one of the current big contributors to the distribution channel's rounds and rates of obsolescence.

A few months ago, I had lunch with Robert Grossman, vice-president and general manager of Toshiba of Canada B&G. He said we are quickly approaching a time when consumers will no longer be willing to pay dealer

markups on hardware, because hardware has become a commodity item, readily available from a number of sources. The consumer knows what the value of the goods are on the open market.

Weighing Value

Customers are questioning the value in the so-called value add. Grossman said consumers will demand a detailing of value added services and will want the option to pick and choose only the ones that are of true value to them.

Other evidence of commodification comes from Evans Research Corp.'s "Purchasing Patterns in Small and Medium Businesses in Canada" study, released earlier this year. The report notes that only 16 per cent of the companies indicated third parties play a role in the actual procurement of products, like monitors and printers.

However, third parties were considered more important when purchasing more complex technologies like networking, systems integration and telecom-related products. In other words, there may be some remaining PC products that still qualify as "high-margin" sales, although even with networking,

companies like Bay Networks (with its NetGear line) are marketing the hardware as consumer commodities.

In terms of the user base for PCs, Reiter noted that segmentation is the main feature defining tomorrow's PC market. He said the idea of a "good enough" PC will be as visible as the idea of the latest and greatest PC. "Some will need all the power they can get," said Reiter, "some will need only NC [or Web TV]."

Revising the value equation in this new market may require sorting out the choices for the consumers who are being inundated by an ever-broadening array of PC appliances. \square

*David Tonello is based in Vancouver and is Editor of *The Computer Paper*. He can be reached at dt@tp.ca.*

"Customers will demand a detailing of value-added services, and will want the option to pick and choose only the ones that are of true value to them."

NEW ERA OF SOUND



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Asus Issues Counterfeit Alert

by Alan Thivierge

Imitation has been said to be the sincerest form of flattery. But when someone's copying your product, damaging your reputation, and trying to gain some of your hard-won market-share, imitation goes by another name: counterfeiting.

This is the imitation faced by ASUSTek Computer Inc., the manufacturer of Asus boards, and Supertron Canada, sole distributor for Asus motherboards in Canada. ASUSTek (which has corporate offices in San Jose, Calif., Düsseldorf, Germany, and Taipei, Taiwan) and distributor Supertron in Toronto, have alerted resellers to the recent appearance of counterfeit Asus motherboards.

The board in question are unauthorized copies of the ASUS TX97-E line Pentium board. "Sometimes we think it's great when someone counterfeits our product," said William Yang, regional manager for Asus Canada in a recent telephone interview. "After all, it must mean that we're doing a good job, and counterfeiting computer products isn't all that common. The bad news, though, is that the quality of the counterfeit boards is very poor. The appearance and packaging of the counterfeits looks very similar to genuine Asus boards, but the quality of manufacturing is very coarse, the DMI doesn't work, performance is poor, and the counterfeits have a very high failure rate. That means that everyone gets hurt by the counterfeits — the company, the reseller, and the end-user who's bought the counterfeit unit."

According to Yang, the counterfeit boards have been showing up in China, where Asus has a large portion of the market share for some time, but have only recently started turning up in North America. "In China," he said, "because we've got such a lot of market share, we've been used to selling 10,000 to 20,000 counterfeit TX97-E boards per month. That's about a one-to-one ratio to our legitimate boards. It's hard to tell how many are actually leaving China, but beginning in November of 1997, they've started turning up in the Toronto market, in Vancouver, and in the U.S."

"Asus sells a premium name, known for its high quality," says Paul Chiu, senior product manager for Supertron Canada. "People are being offered TX97-E boards at \$40 or \$50 less than the normal dealer price, it's sometimes hard to resist. The counterfeit boards are being sold at a price that's lower than a Tier 1 clone board — even the gray market can't do better than that."

Grey market products — those that enter into the country outside the normal distribution channels — at least have the virtue of being the real thing, and therefore living up to the manufacturer's standards.

The counterfeit boards, however, are of inferior quality and performance. And that's a concern for resellers. "We've been noticing Asus counterfeits the quite same time," says Herman Yee, president of Ontario-based Northern Micro, a systems integrator who's been looking out for the counterfeit boards. "Asus boards are a quality product, so many of our customers, which include the federal government and a number of large corporations, wouldn't touch Asus. Counterfeit boards would degrade our reputation, and be harmful to us and to our customers."

The counterfeit Asus boards are different from real company product in a number of hard-to-spot details, which aren't likely to be noticed by an unscrupulous reseller, much less by an end-user.

The differences — such as missing trademark notices, serial numbers and product numbers, as well as poorly reproduced artwork, are listed (with example photographs) in the Asus Web site at <http://www.com/bsd/Compcopyright.htm>.

Asus has struck at the source of the problem by taking legal action against known hardware counterfeitors in China. "We've used software we've been able to identify as producing counterfeit boards," says William Yang. "That suit is now in progress, and lets the counterfeitors know that we're serious about following this up."

"Closer to home, we're trying to educate both the reseller channel and the end-user about the problem — that's why all the information about the differences between the counterfeit and the real motherboards are available on our public Web site."

Resellers can stay safe by buying TX97-E boards only from Supertron, Asus' authorized Canadian distributor.

But as with most things in life, this is a case of "buyer beware." As Supertron's Chiu says: "If the price seems too good to be true — run, don't walk, away from the product." **EE**

"The appearance and packaging of the counterfeits looks very similar to genuine Asus boards, but the quality of manufacturing is very coarse, the DMI doesn't work, performance is poor, and the counterfeits have a very high failure rate."

— William Yang

Alan Thivierge is a Toronto-based journalist who specializes in high technology. He can be reached at <mailto:mailto:mt@pacifier.com>.

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Connect the Bots

Selling to the networking market

by Jeff Evans

In the old days, only the biggest and richest government agencies and corporations could afford networked computing systems. Networking technology was almost a religion, presided over by an elite class of technology professionals, and was able to command budgets that sometimes approached the gross national products of small countries.

However,

much of the developed world and a large part of the developing world will be permeated by low-cost, simple-to-use networking technology. Networking technology will not just be a part of widespread "big iron" computing, but also will, as part of the convergence of computers with traditional telecommunications media, become intertwined with the consumer electronics industry, education, retailing, and many forms of entertainment and social interaction.

TCO And The Art Of Solution-Selling

The major barrier to the wider adoption of networking technology has always been its cost and complexity. The initial cost of hardware and software is only a small fraction of the real cost of a network to an end-user. The "full" costs — often hard to predict and to quantify as advances, include training, support, maintenance, customized software development, copyright compliance, security, data archiving, insurance, and infrastructure (including such things as modifications to buildings, climate control, electrical power supply improvements, network cabling and external telecom links). As well, consider the so-called "idle time" — the time spent by employees fiddling with networked computer systems, trying to get them to work. All this adds up to the total cost of ownership (TCO) of a network.

In the past, many businesses that began to build PC-based networks stayed out as

Some Players

IBM — <http://www.pcnetworking.ibm.com>

IBM's well-logged presence in networks computing, its success as the early 1980s IBM personal PC to take over the business computing market completely, positioning IBM as most relevant. In the U.S. the use of the Microsoft/Intel personal computer and IBM's the extent of the Internet, giving IBM a share of the extended computer market.

However, IBM is one of the most original inventors of emerging networking technology, in particular of Token Ring LAN technology, which gives it a unique advantage in its market as a oligopolist and supplier of IBM's own hardware, communications software, and offerings and related computing systems. IBM has held up its end of its long-term networking commitment, offering the high-quality and reliability of its 3200 and 4200-based systems as a leading to the development of Windows NT.

IBM also offers LAN solutions, and has made a major contribution to the small business market, establishing a several small business consulting service in Canada.

3Com — <http://www.compaq.com>, <http://www.3com.com>

With its division of TokenTalk Computers, Compaq's 3Com (3Com) Group has become the second largest telephone company in the world and the largest seller of LAN networking solutions in the world. 3Com also offers a number of networking component and services lines and offers the widest range of products across the spectrum of Windows and DOS-based computing, from broadband devices to various servers.

Compaq recently announced a new gigabit networking technology, well through TokenTalk and Digital's now a leader in developing new electronic commerce solutions.

Lucent Technologies — <http://www.lucent.com>

AT is a diverse company whose computers are part of a product line that includes personal computers, fast test and measurement equipment, AT&T NetSwitch architecture, designed for high performance networking worldwide, and servers that have been introduced by Intel, Sun and DEC's various big processor architecture. And with AT&T strategic alliance with Intel and

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ad hoc manner, adding individual computers as needed, or allowing departments to establish their own small LANs. Often, it was hard to measure the productivity of a network solution against its total cost, and when this was actually tried, the results were often frightening: networked PCs turned out to be horrendously expensive.

Now customers are increasingly aware of the need to see networking as an integrated part of an enterprise's business plan. To be successful, installers need to be able to present a business case for a network solution that offers the highest performance and productivity for the lowest TCO.

The Universal Standard That Just Happened: HTML And The World Wide Web

Another main reason for the high cost and complexity of networked computing was the proprietary nature of the various network solutions on the market. All of the major mainframe and workstation computer makers, such as IBM, Digital, Hewlett-Packard, Tandem, Sun and Silicon Graphics, developed their own proprietary hardware platforms and operating systems, imposing high incompatibility costs as end-users. Even the Unix operating system, which was supposed to be an "open system" able to run the same software on multiple platforms, failed to retain true compatibility, fracturing into a host of incompatible "flavours" of Unix.

The brilliant idea made the whole industry structure of proprietary, incompatible networking obsolete. A few very bright, non-commercial minds saw an opportunity to make the Internet the basis for a truly open information network for all of humanity. The key element in changing the world of networking was the creation of HTML, the Hyper Text Markup Language. Created by Tim Berners-Lee and others, this was a text-based page description language, which could create electronic documents composed of text, pictures, sound, movies, or many other kinds of data. HTML documents could be viewed on any computer that had a browser program that could interpret HTML commands and display an HTML document on a computer screen. HTML's basic format was largely copied from a specialised electronic document language called SGML (Standardized General Markup Language).

However, the "Hyper text" in the HTML acronym refers to the ability to link different computer files together, even if they are located on different computers, in different countries. For instance, using HTML, a computer document dealing with Christopher Columbus can have an electronic interface built into it which will let the interested reader jump to related documents on Spanish history, map-making, or the space trade — even if those other documents are on another hard drive, or CD-ROM library, or another computer connected anywhere to the Internet.

The developers of HTML envisioned a billion "World Wide Web" of server computers linked via telephone lines and modems, millions of end-users could locate and view information on any connected computer anywhere in the world, using a Web search engine database, a Web browser and the HTML language. The developers of HTML



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offered their idea to the world as a free gift, soon creating the otherwise inevitable ten-decay-to-deadlock incompatibility, proprietary versions of HTML.

The result of this breakthrough was to do an end-run around proprietary computer operating systems and incompatible hardware and software and seemingly overnight, to present the world with a completely new model of computing.

i4400 project: HP has joined a very diverse list of RISC processor technology users in the marketplace.

HP can be expected to vigorously push i4400-based servers and workstations running both a Sun OS 4.1-based version of RISC and UNIX, starting in 1993.

Mac: <http://apple.com/2000mac>

After achieving 12.5 million 2000 Macintoshes sold, the network hardware market had reached the market trend "saturated". Apple has a full line of network interface cards, hub creation modules, PC card modules and combination adapters to accommodate the 2000 Macintosh in possession of the market, using parts developed for the PowerBook series.

2000 <http://apple.com/2000>

The Santa Clara Corporation is the market leader in Unix networking solutions, running the Unix servers, developing the secure security and availability of the Unix server line and the Unix Client Computing Infrastructure. 2000 is a suggestion for the i4400 networking board due to start in 1993 and, in effect, to bring up the pace of a new line of Unix servers.

Apple: <http://apple.com/2000apple>

To do a truly viral sales campaign, a house of cards, Apple uses a lesson in marketing advertising prowess and along with its Mac II in AppleTalk architecture. Mac Apple's position in the networking market has suffered due to the company's continued management and technical inabilities and development over the past 10 or so years.

Apple has an enhanced strength server 65 to match NT or Unix, its handheld Newton MessagePad will enter, and although a good deal of heat content is reflected on Apple Mac computers with a 3000 per year profit margin, there is for the Apple platform is a rapidly losing user share to bring up the pace of a new enterprise server.

Classix: <http://apple.com/classix>

Classix is one of the oldest Internet businesses and software for easy networking solutions. It claims to be the oldest leader in solution providers of Internet products. For example, Classix Solutions has 10 per cent of Internet routers used in networks worldwide.

HomePage: <http://apple.com/homepage>

HomePage has problems in management of mixed PC client and Unix server systems for enterprise computing solutions. It actually has more than 10 per cent of the globe in terms of PC Unix computing.

Network Cluster and i2000: <http://apple.com/i2000>

Shared disk Internet Server Cluster (SISC) platform, although apparently strong, Internet provider has come up from providing individual Internet connectivity to offering business Internet and networking services.

Network Cluster is a separate product, which includes, implementation from point to point or point to point, which

Today, as a result of Web-technology, all network product manufacturers are moving to make the World Wide Web, Web servers, and HTML compatible browsers the basis of their network offerings. Increasingly, network solutions feature controlled, scaled-off mainframes called servers, for general use by enterprises. For communicating with clients and suppliers outside an enterprise's network, standard access and controlled extranets are offered.

Microsoft intends to make the Web browser another the basis of its new versions of Windows and Windows NT, as the U.S. Justice Department will allow it.

Web browsers and HTML are the universal front-end for network computing. At the back-end are a host of different server

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Can You Run A Network Without A MIS Department?

In order for a market to grow rapidly, constant decline. Much of the TCO for networking customers relates to the difficulty of managing a network without a large and costly in-house information services management structure. Much of the networking research and development efforts of companies such as IBM, Compaq, Microsoft and Sun have been directed at making network connectivity as automatic, cheap and reliable as possible.

IBM has pioneered the concept of "Wake on LAN," where a new PC or other network device can be plugged in to a network and powered up, and the device and the network server will automatically detect each other, "shake hands," and be able to start working together.

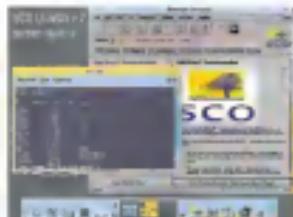
Compaq's business PCs are made network-ready out of the box, eliminating much of the need for custom configuration, and allowing a network administrator to easily install and maintain software from a remote location. Microsoft, Intel and other major vendors are collaborating on the Network PC standard, an attempt to make the use of Windows PCs on a network much simpler. All of these initiatives are intended to lower TCO, and incidentally, make customer service much easier for resellers.

Thanks For The Good Ideas, Java Boy: Now Get Lost

Faced with heavy competition from the Windows/Intel PC, Siga Microsystems developed and promoted its own "universal" software application programming language, called Java. Unlike HTML, which is a document description language, Java is intended to be a full-featured software development platform. The idea is that its applications can run on any computing device through a Java Virtual Machine. Java applications can be supplied over a network from any server to any end-user device that is capable of running a Java program. Java applications [little software applications] can also run within a Web browser

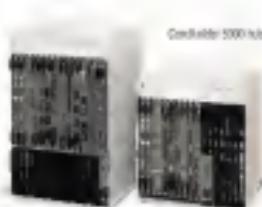
and, can be embedded in a Web page, allowing HTML documents to become carriers of Java programs. This allows Web pages to become highly interactive, leading to great opportunities for electronic commerce and other applications.

Java's idea of a universal application language and a network-centric model of server-delivering applications to end-users as needed, all point the way to a much lower TCO than the complex PC client/server model IBM, in particular, has its eye on a global base of 38 million or so old-fashioned computer terminals



that need replacement by Web-compatible devices. The company is betting on a substantial market for Java applications, resulting in "Network Computers" — low-cost devices without internal disk drives, that download software as needed from a server via a high-speed network.

Although Java has stimulated a huge amount of software development efforts, the results in terms of high quality, high-powered software applications have so far been sketchy. Core's attempt to develop a Java business software suite has collapsed, and Lotus's E-Suite, though more usable, has found only a limited audience.



Compaq's Presario laptop

Java applies may find a large market in the consumer electronics field, where, mixed with chips embedded in TVs, phones, and other gadgets, it may spawn a new age of smart connected appliances. What is undeniable though, is that the challenge presented by Java has spinned Microsoft and Intel to work hard on improving the TCO of Windows/Intel networks. Microsoft is an advanced development of Hybris — a Windows Terminal server product that will allow low-cost client terminals to run Windows applications off of a high-powered server. If Hybris is a workable product, it could incorporate most of the advantages of Java for lower TCO, while allowing end-users to continue using the industry standard Microsoft office software.

Siga Microsystems <http://www.sigamicro.com>
Siga Microsystems has developed a line of servers for Java and is aggressively working to expand its business networking services in Canada and Internationally. Siga, in alliance with Datacom, offers a range of modular consumer internet access and Web site hosting (Brampton), and higher end business networking services involving electronic commerce capability.

Buy Networks <http://www.buynetworks.com>

Buy Networks has established new standards for small- and medium-sized business networking needs, yet is offering new ways, well expressed in its line for the new market.

Intel <http://www.intel.com>

Intel is best known for its family of processors, but the company is also heavily involved in developing high-speed networking technology and industry standards.

Sun Microsystems <http://www.sun.com>

Sun Microsystems, along with Compaq/HP Corp., was key in helping establish computing in a new level of high-performance between 1985 and 1990 using the new computer processor, The RISC in the "chipset."

Sun's version of their operating system attracted a host of high tech and software developers and an absolutely high availability and leadership role. Its focus on reliability and power made it the solution of choice for much of the trading, financial, engineering and scientific community. Sun founder and CEO Scott McNealy also developed a reputation for strong leadership, including his controversial, publicized "McLinux." Merely kind of the entrepreneurial Java is a trend perfectly aligned with the philosophy behind Microsoft, can he help but to hold a strong position behind Java. While the eventual success of Java is not assured, it has certainly put Bill Gates' interests.

Oracle <http://www.oracle.com>

Building on its position as a provider of sophisticated database solutions for certain portions of the U.S. government, Oracle Corp. has become the leader in high-performance databases for business, and a cornerstone of the development of electronic commerce.

Although a strong competitor of Java and, in the opinion of Oracle CEO Larry Ellison — a strong competitor of Microsoft, Oracle is at the center one of the leading developers of Windows NT client base and networking software.

Microsoft <http://www.microsoft.com>

The company that originally created the Web browser, and helped spark the initial emergence of the World Wide Web, Microsoft challenged Macintosh with its own OS that the business world could use, the Windows operating system. Microsoft and Macintosh war in its ultimate position as computing. This battle, along with the severe pricing of the Java effects, contributed to the fall of Bill Gates' once-fair status.

Microsoft <http://www.microsoft.com>

Microsoft's long-term strategy, "What do you want to do today?" and "Innovation at Your Fingertips," reflect Bill Gates' mission to a universal basic station software available to everyone on earth. Microsoft's efforts don't necessarily serve the welfare of such a vision, unless they are run over a class of 500 Gates' personal's owning the new-world world order.

Gates has gone from saying, "The computer is a pain" to wanting his users

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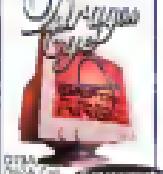
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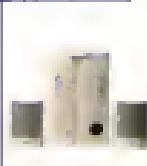
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Tom Charles/Millennium

The Re-Emergence Of Unix: IA-64, NT, And The Two-Way Tango

The biggest success story in the networking market in the last three years has been the rapid growth of Microsoft's Windows NT program. Although identical in user interface to the familiar Windows operating system, NT is a completely rewritten 32-bit operating system, with much greater security, reliability and ability to manage network computing than Windows 95.

Microsoft has also developed a range of Back Office applications, which gives NT the power and flexibility to be a viable business networking platform. Versions of Windows NT are available for Intel, DEC Alpha, PowerPC and MIPS platforms. With the recent purchase of DEC's Alpha technology,

by Intel, it can be expected that NT will, in practice, be available solely on the Intel platform.

Added by Digital Equipment's acquisition of NT as an enterprise networking solution, Microsoft has gained the lion's share of new business in the networking market in recent years, especially in the small- to medium-sized networking field. The other major network operating system vendors, such as IBM and Sun, have watched their market share decline (though with the rapid expansion of the networking market, they are still among some absolute growth).

The most intriguing development in high-end business computing over the next few years is likely to be the introduction of Intel's new 64-bit IA-64 processor technology, beginning in 1999.

coupled with products to dominate it. The next version of NT and Windows 2000 (code-named "Windows NT 5.0") will bring the two major network operating systems into the majority of enterprise software as soon as being sold. The Microsoft Back Office family products are currently supporting the use of the open networking and database tools that can be placed around either Windows. Although much improvement of Microsoft's tools remains to be done, a sense of technological improvement is such as makes present as truly conceivable.

NetBSD — <http://www.netbsd.org>

As with Linux, offering a networking OS that supports ultra-powerful computing, NetBSD targets smaller PCs as a viable platform for network computing. However, some utility management utilities, such as the purchase of WinPcap and an apparent Microsoft's as the threat from Microsoft's Win32 NT has led to a decline in NetBSD's market share.

BeOS — <http://www.beos.com>

BeOS is a more traditional desktop and productivity platform, consisting of certain key features and utilities components. At the recent Comdex computer show in November, BeOS introduced a range of new Intel Pentium chips, including eight-processor Ethernet cards, eight- and 10-port Gigabit Ethernet, and 10- and 20-port Modular Shared bus for the business computing market. BeOS has also introduced a new set of Software tools for the small business market, including dual-speed hubs, eight- and 10-port hubs, and a new two-port bidirectional PCI Ethernet card. BeOS also makes a wide range of network hubs, routers, remote management software, Network Computers, print servers and networking utilities too.

Dragon Technologies Co. — <http://www.dragon.com>

Founded in 1987, Dragon Technologies Corp. offers quality Internet, one of the best recognized makers of memory module chips, but since 1992 has also

IA-64, a much more powerful family of silicon chips, is based on a strategic technology alliance between Intel and Hewlett-Packard.

The new chips will be able to run older 32-bit Windows and Windows NT programs at reasonable speed, but they are readily designed to run a new, 64-bit version of Windows NT and 64-bit applications programs. They are also designed to run Unix. Intel will put Unix and NT head-to-head on the same computing platform, a platform with enough power to be used for all but the most demanding of enterprise computing tasks. Sun, IBM, HP and Silicon Graphics have all announced support for IA-64, so all the flavors of Unix will have to make on the same playing field with Microsoft. This could mean a showdown between Windows and Unix for the high-end of enterprise computing.

NT is still notoriously weak in terms of its security and reliability features compared to Unix.

A fact that Unix vendor SCO has exploited in becoming the leader in Unix server (albeit on Intel-based computers). By late 1998, a battle royal will be shaping up, as NT and Unix wage what may be the last battle in the operating system wars.

For the time being, companies such as Compaq and IBM, which have both NT and Unix server offerings, claim it's not a matter of NT or Unix — but NT and Unix, according to customers' individual needs.

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A Little Knowledge Is A Dangerous Thing

The Java story is a cautionary tale for both product manufacturers and resellers. It was obvious that the TCO of the average networked Windows computer was too high, so an alternative model (Network Computer running Java applets from a centrally managed server) made a certain amount of sense. However, one has to conclude that the senior management of Sun and Oracle never really understood why people bother with PCs in the first place. Those reasons are flexibility, local control, and a huge choice of good software.

It makes as much sense, at least in the short term, to add better connectivity and management to the PC to lower its cost of operation, rather than to throw the whole thing out and start over again with an all-Java solution. In particular, the lack of superb, compelling Java business software is a major impediment to the believability of the Java business model. IBM may be able to find some gold in Java territory, but it can afford to offer Java/PC solutions as part of its wide spectrum of networking options. If Java doesn't become the next big thing, Big Blue will get over it.

How To Get Good At Selling To The Networking Market

Study new customers' needs. In particular, this means getting to know the small to medium business networking market. The phrase "The network is the computer" really does apply to a business network if any part of the solution fails, the entire company is in trouble. This means that the model for reseller success is different than in the price-sensitive consumer PC market.

The most preferable, manageable solution is much preferable to the cheapest. Resellers should avoid selling networking components they're not familiar with into computer installations. Brand names should take priority over bargains, and part of the cost of selling well be in training and keeping technically competent staff.

Follow The Money

In particular, qualify the potential networking solution customer to determine how experienced and reliable they are. There is a certain minimum cost of establishing and maintaining a networked PC system. If the customer is resistant to a realistic quotation, it might be better to let that business opportunity go, and find another customer.

The Future

In 10 years, while some aspects of networked computing will still be recognizably similar

to what they are today, many others will be very different. There will still be a need for servers, devices that combine mass data storage with the physical equipment for managing access to data over telecomac networks. Network bandwidth will be enormous, with the possibility of much increased



satellite and wireless networks supplementing fiber-optic lines.

The average home should have at least an option for several megabits per second of download speed. Businesses will have the option of local network speeds in the tiny gigabit per second range. The biggest changes are likely to come in terms of end-user devices. The personal computer may not exist as we've come to understand it over the last 20 years. At the very least, a large number of personal info appliances will be reduced to highly portable formats (pocket or media-card-based PCs with telephone and TV functions), or embedded in TV sets, phones, cars and other machinery, toys or furniture.

Even where something as simple as assembling a desktop workstation remains, most of its bulk is likely to consist of a videoconferencing, sound system, and input and output devices (such as videoconference

microphone, speakers and projecter).

For resellers, the more complex and costly networking solutions become, the more technically challenging they will be for resellers to handle, but there will also be more opportunity for maintaining decent margins for consulting, system integration, training and support. The cheaper and more automated networking becomes, the larger the potential market, with fewer demands on the reseller for high technical skills, and lower profit margins all around. **SR**

Jeff Evans is associate editor of Canadian Computer Wholesaler. He is based in Toronto and can be reached at jeff@tpe.com or

primax <http://www.primax.com>
primax is a division of a designer and manufacturer of high quality networking processor and storage products. The company offers a well-respected line of Routers, networking switches, connectivity and security products. Primax makes the D-Link router series, as well as 1000Base-TX access adapter cards.

ResaleInfo <http://www.resaleinfo.com>

ResaleInfo makes switched routing solutions that are priced low in cost, as well as ATM telecommunication Router Modem high speed fiber optic network switches.

ResaleInfo has recently announced major new strategies to build networking infrastructure in China, which clearly shows a current economic trend in one of the most interesting markets for networking technology.

Powerline <http://www.powerline.com> <http://www.powerline.com/implanet>
A multi-vendor network system integrator, PowerLine employs a broad array of hardware and software solutions such as Cisco and 3Com to create networking solutions. PowerLine offers consulting, designing, and implementation services for corporate clients who include major telcos. The company has a particular expertise in the implementation of PBX, wireless and cell centre systems of which requires high-speed integration of voice and data over a network.

The company also offers commercial Internet access, local connection, local access and voice over frame relay solutions.

3Com <http://www.3com.com>

3Com is a leader in interconnected networks, including some of the earliest when megabit network interface PC Cards. Current products include the 3Com Ethernet 3200TX Modem/3C card—a 10/100 integrated PC Card with built-in controller system.

B-Link <http://www.b-link.com>

"Link for Less" is the driving rallying cry of this company which has been an innovator in both technology and marketing in the network hardware market. B-Link is currently running an "800" agent in their program allowing sellers to purchase B-Link products from qualified resellers while making no payment for resellers.

B-Link products include hubs, switches and transceivers. D-Link is making a special effort in the small business networking market.

Digital Renaissance <http://www.digitrena.com>

This fledgling Canadian network technology leader, initially based on the idea of creating a cost-effective high-speed to work, has developed 1000Base-TX copper-based technology to enable high-speed, extensive networking within and within or to extend and enhance the Internet. The TNG software is intended to allow the owners of network connections to be driven over extremely quick network connections. Microsoft has licensed Digital Renaissance to run its effort to encourage the development of Internet technology that allows multimedia even over slow physical telephone service (PTT) lines.

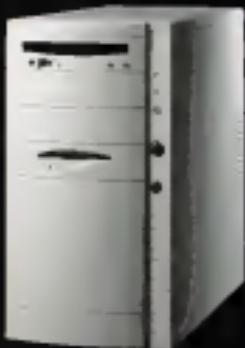
Sonicwall <http://www.sonicwall.com>

The pending 2005 entry software market has adapted to the realities of Windows XP and the Internet with its latest version of the PC company's entire portfolio. Sonicwall's package, an integrated version of Microsoft Anti-Virus 4, specifically aims at how virus threats from the Web, as well as supposedly secure broadband and intercepts.

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Distribution: A precarious proposition?

by Paul Weisberg

The so-called "channel" is highly competitive, fraught with dipping margins and conflict.

The distribution piece of the equation is certainly no exception. Much of the PC industry has come to rely on distribution as a middle layer for the storage and delivery of computer products and parts from the manufacturer to the reseller or a specialty fastest messenger, the distributor handles the receivables and the necessary credit checks on the purchases. All of this requires an infrastructure and expertise — which distributors have established. "This is their core competency," said Debra Bresler, IBM's manager of advanced business initiatives.

U.S. and Asian-based PC manufacturers rely on local distributors to represent their interests in a vast, dispersed and fragmented Canadian market, made up of thousands of large and small resellers and retailers, which in turn rely on that middle layer to source products for customers.

Yet, as consultant Bob Frichard, president of Kitchener, Ont.-based R. J. Frichard & Associates, notes: "There continues to be a cloud on the horizon." The inability of distributors to generate demand for vendors' products is the thinnest "parch" in a disadvantage and limits their scope, he says. And Frichard is among industry observers who forecast diminishing returns from software sales for distributors as more end-users start making their purchases of applications over the Internet.

Vendors are bypassing the distributor channel (and often the reseller) by shipping their systems bundled with many of the standard packages. "You can specify custom [from one vendor] right down to the application package [including] word processing and accounting," Frichard says.

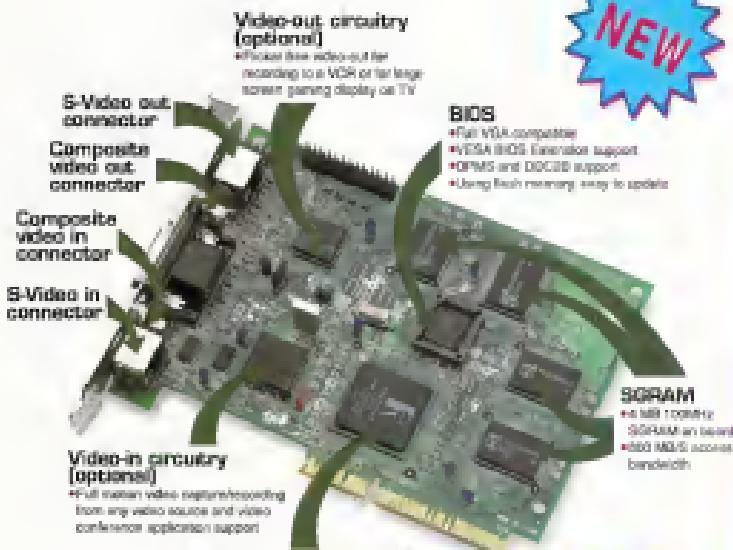
The latest summary numbers on the computing distribution channel in this country from Toronto-based International Data Corp. (Canada) Ltd. represent Canadian distribution in 1998. At that time, distribution experienced growth of 21 percent, continuing a trend of outpacing the rest of the information technology industry in Canada, and total revenues in the same year were about \$4.7 billion. Also, seven companies accounted

"It is a much more competitive market. We had margins of 22 percent in 1998, but there was a smaller base of products and lower sales."

— Mary Klawin

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"I can buy a Compaq machine from a distributor at a point-and-a-half margin... which is not much more than what I would have to pay Compaq."

— *Lee Carter*

PCs (processors, notebooks and servers), 23 per cent for software, 14 per cent for data communications products, eight per cent for printers, three per cent for systems and workstations and one per cent for services.

The IDC survey indicates a small shift away from PC sales for distributors that could be more pronounced in the late '90s as all the major PC vendors (IBM, Compaq, Dell and Hewlett-Packard) continue to cut prices for their machines. "The \$1,000-PC is definitely here," says Albert Desaut, director of special projects at the Etobicoke, Ont.-based Evans Research Corp., which is currently undertaking a study of Canadian PC distribution.

Desaut says in addition to losing more money on PCs, distributors are also losing lower margins or markups on products determined through market pressure. "On some major brands over five years it has gone down from 11 per cent to two or three per cent."

Bruce at IBM Canada counters that lower inventory costs achieved from the adoption of a build-to-order/channel assembly programs with its distributor and reseller partners should alleviate the impact of lower margins. This strategy being adopted to accomplish this, she says, is having distributors maintain their position as the collector of receivables and the guardian of credit checks, while the manufacturer ships the products directly from its Markham, Ont., assembly facility to either the reseller or end user.

But Lee Carter, vice-president of operations for the Mississauga, Ont.-based national reseller chain, GE Capital Technology Management Services (Canada), says that the current price war among vendors has led to a flood of PCs streaming into the market and thus undermining the goal of limiting inventory in the channels. He also wonders how distributors are able to make any money in the current situation. "They are doing well on the top line, but not on the bottom line. I can buy a Compaq machine from a distributor at a point-and-a-half margin... which is not much more than what I would have to pay

for more than 70 per cent of the revenues derived from the distribution of computer products. Ingenix Micro Inc. (Canada), with six billion dollars in revenue, is the largest player, followed by other broad-line distributors such as MicroNet Canada Inc., Globellic and Tech Data Canada Inc., and more specialized companies like BMD Data Systems Ltd., Bioscopic Canada Inc. and Sigtronics.

According to the IDC report, distribution claimed 27 per cent of revenues from peripherals and components (such as mass storage, monitors, motherboards, sound cards and memory products), compared to 24 per cent for PCs (processors, notebooks and servers), 23 per cent for software, 14 per cent for data communications products, eight per cent for printers, three per cent for systems and workstations and one per cent for services.

Compaq (directly)*

Meanwhile for Mary Whittle, vice-president of marketing for Western, Ont.-based Ingenix Micro Canada Inc., reduced margins have been "a fact of life" for the past 10 years. "It is a much more competitive market."

We had margins of 22 per cent in 1988, but there was a smaller base of products and lower sales,"

Whittle also said increased PC sales along with the revenue lost in lower prices, she says, that PCs are now in 44 per cent of Canadian households and that businesses are still buying systems to meet their requirements.

Susan O'Dell, president of Mississauga, Ont.-based Service Dimensions, suggests the market has reached a stage of saturation where those consumers who either want and can afford a complete hardware/software system have already made the purchase.

Furthermore, distributors lost revenue with fewer PC hardware brands seeking the attention of end-users, a development that started with software, suggests Desaut. He reports that the

top three manufacturers — IBM, Compaq and HP — increased their share of the PC market from 31 per cent in 1996 to 44 per cent in the last quarter of 1997. The manufacturers go beyond lost sales, however. "As the number of brands consolidate, the distributors have less negotiating power with vendors," he says.

The IDC survey also demonstrated a trend towards greater revenues for distributors on the sale of third-party components and peripherals to resellers.

But Desaut says he's noticed fewer of these items going through the distribution channel. Instead, the vendors are adding them to their machines in their factories outside Canada, he says.

One figure that "year-by-year decrease in component flow" may be reversed with the involvement of the major distributors in configuration services and vendor build-to-order/channel assembly programs — the latter is still getting off the ground.



Michael Morris
President of
MicroNet Canada Inc.

RESELLERS

PRODUCTS

DISTRIBUTION

Distributor Revenues in Canada, 1994-1997 (\$ Millions)



Source: IDC Canada



DISTRIBUTION

Smaller regional VARs will be the major users of distributors' configuration services, according to Caisse, while the large national reseller operations like his own CH Capital (which have their own facilities) will be more likely to take advantage of them at peak buying periods. He feels the distributors are the best-equipped to deal with the potential of increased choice for end-users in terms of configuration options from vendors under build-to-order.

Distributors are increasingly selling formerly high-end products, such as data communications products and mainframe systems. The latter still require considerable financial and technical assistance from the vendor because of their inherent complexity compared to PC systems, says Mitchell Martin, vice-president of the Toronto-based Marvel Canada Inc. His organization has a division dedicated to the Sun Microsystems workstation product line, which includes technical support, marketing and training facilities for reseller staff.

But Tony Oliver, IDC's Canadian manager for Canadian channel research, doubts that the high volume, broad-line distributors like Marvel have the resources, expertise or business model to take on many such advanced systems. He notes, for instance, that when IBM decided to have its AS/400 machine sold through the channels, it did

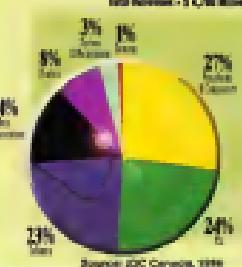
not approach any of the previously mentioned seven leading distributors in Canada. Instead, a more specialized group with an expertise in AS/400s and a stronger presence in the U.S. market, have been picked by the vendor to handle the company's product line.

The Canadian distribution channel has witnessed considerable consolidation of the reseller players and the disappearance of smaller companies. The middle layer in the PC industry has been forced to be as efficient as possible. Hence, the adoption of on-line ordering and electronic catalogues, for instance, which saves time on the telephone for their sales reps. Nevertheless, Canada still has too many high-volume, broad-line distributors according to Caisse. The more specialized, vertically oriented distributors will likely survive because they serve an important niche market, but he is more pessimistic about their large competitors.

Paul Rosenberg is a Toronto-based journalist who specializes in high-technology reporting. He can be reached at www.entrepreneur.com

Canadian Distributor Revenues by Product Area

Total Revenue: \$1.76 billion



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The State of Distribution

By Mary Whittle



The distribution service industry has reached a stage of maturity.

Maturity comes with all the expected challenges and opportunities. For resellers, the sheer size of the distribution channel in Canada ensures a broad, easily accessible assortment of technology products. For manufacturers, channels abound through which to sell their products. For the distributors themselves, this creates a highly competitive market place that demands efficiency and low-cost operations. Therein lie the challenges.

Throughout the channel, profitability among the players has weakened. But this weakness translates to big business for the partners who can provide the highest level of service for the most competitive price.

Resellers search for efficiency gains and increasingly rely on distribution as be their inventory manager, on a "just-in-time" basis. Since distribution operations are now so efficient, same-day turnaround for these orders is typical.

Manufacturers constantly strive to take costs out of their business so they pass these cost associated with "getting the products to market" to their distribution partners. For these vendors, it is typically cheaper to let distributors handle the costs of account management, smaller commissions and credit extension. This has translated into more business for distributors from non-individual technology sectors. The high-end mini-computer companies, many based in the Unix operating system environment, are increasingly sold through the two-tier distribution channel rather than from the manufacturer directly to the reseller or end-user.

And 1997 witnessed the entrance of the telecommunications industry into what had traditionally been known as the computer and peripherals channel. The convergence of data and voice transmission is causing computer and reseller to enter the telecommunications area and telecom resellers to enhance their business in the computer networking environment.

Standardization of processes and systems is a critical success requirement in the channel. It is important for the channel to recognize its value and to streamline product acquisition for the reseller. The advent of channel assembly demonstrates this perfectly. Manufacturers understand their strengths — they are good at designing computer systems and sourcing the components. But is there any value in pre-assembling the box? How do they know that customers will want that exact configuration? Does it make more sense for assembly to be closer to the ultimate customer who can then order a customer-designed system?

Resellers understand that they are the agents to help the ultimate customer comprehend the benefits of the technology installation, recommend, source and train the end-user on the system's capabilities. But is there any real value in "value-added" changes to the pre-assembled system? Might there be cost savings by placing responsibility for just-in-time delivery of custom configuration into the hands of the distributor?

The role of distributors is to have the products available when

needed, and be able to deliver in 24 hours. Giving more of the responsibility for central-assembly-type processes to the channel partners that have demonstrated such focus on efficient operations seems to be the natural course. Channel assembly is a very large opportunity for distribution.

The Internet may be one of the greatest opportunities in distributors' customer service pursuit for efficiency. Web-based service allows resellers to search for products that will fulfill their customers' requirements, check pricing, availability, even product specifications, and then place the order electronically. Once placed in the system, resellers can check the stage of the order's progression through the "Net as well. Not only does this allow the customer access to thousands of products, these transactions can be taking place 24 hours a day, seven days per week.

Over the last 20 years, the growth of the industry has been spectacular. Often manufacturers could not design and build products fast enough to meet the demand. This caused players throughout the industry to operate in a reactive mode.

In the more mature industry, issues of "brand" supremacy are discussed among the manufacturers. Distributors are increasingly being called upon to help establish brand identity for manufacturers and resellers alike.

Manufacturers and resellers need to make technology more consumer-friendly as computers and peripherals become mainstream commodities.

For distribution — the road ahead holds some potholes, like decreasing profitability and consolidation of suppliers. But it's full of new bonds to adapt to, and endless opportunity. \square

Mary Whittle is the vice-president of marketing at Toronto-based Ingram Micro Inc. (Canada).

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Ink-Jet Printers

The best black, color printing sale for under \$500!

by Sean Corrath

"Photographic-quality prints go through ink

like a vampire at a blood bank and require
costly special photo printing paper."

1987's best photo printers, black-and-white and color, provided a service to consumers that no one else had: the printers that gave the best value for their price.

Since many alternatives are available, the relative benefits of ink-jet versus laser printers, resellers need to be prepared to address issues. So, what are the advantages of the ink-jet printers currently on the market, compared to laser? Who would best benefit from ink-jet technology?

Over the past couple of years, ink-jet printers have improved immensely — to the point where they now represent more than 15 percent of printers sold to home PC users, and an increasing share of the business printer market. Previous ink-jet were only marginally better print quality than the dot-matrix printer, and much slower than other dot-matrix or laser. Recent advances in ink-jet technology now allow the user to print text documents at a quality that is nearly indistinguishable from laser output. In addition, the output resolution on newer models has improved so much that prints of images actually resemble photographic prints instead of the heavily-pixelated and jagged output of years.

High-quality color output doesn't come without a cost, however. Color documents with more touches of color are generally easy on the ink cartridges, photographic-quality prints go through ink like a vampire at a blood bank, and require costly special photo printing paper. Add the cost of ink cartridges and other supplies factored in, the printer

is good for high-resolution, photographic-quality prints, but equal or less than the cost of the hardware and supplies involved. In fact, some ink-jet printers offer to low-cost analog printers (lithograph units), priced in the \$1,000 range. Once the customer is "hooked" in by buying the hardware, the major profit opportunity lies in accessories and supplies in meeting the demand for ink and supplies.

As for speed, laser printers don't have anything to worry about just yet. Full-page per-minute (ppm) ratings for both dot and high-quality output are climbing steadily. Depending on the ink-jet model, high-quality full-page full-color output can take anywhere from 15 to 30 minutes. High-quality black-and-white is a much speedier one to two minutes per page.

What does this all add up to?

For the end-user who will need to print a lot of high-quality black-and-white output, laser printing would certainly seem to have the edge, in terms of reliability, overall cost and output quality. Even with color laser printers, for users who need consistent and quick printing in higher volumes, and aren't overly concerned with the initial printer cost.

But for the average user, who will be using a printer for low-resolution yet high-quality output, for occasional splashes of color, and for just plain fun, the ink-jet makes a compelling case. This would seem to indicate that the ink-jet printer will continue to rule the roost in the

retail market for the foreseeable future. The ink-jet can also be the perfect addition to a small office that requires occasional near-photo-quality color output, without breaking the bank.

The Contenders

For this month's Lab Test, we asked the manufacturers to supply one color ink-jet printer, with the focus being on the personal or home office user, and the cost roughly \$300 or less. This is the "sweet spot" of the consumer and small office ink-jet market: the range where most of the business is to be done. High-end color printers, which have to accommodate professional needs for PostScript compatibility, color correction and networkability, carry a much higher sticker price, and are of interest to a much smaller market.

The Tests

To measure print quality, we printed a page of text onto normal bond paper in highest-quality mode using Microsoft Word, and a high-resolution photograph onto glossy photo paper. For color accuracy, we printed and compared a pair of pictures on both regular bond paper and glossy paper. We also printed a set of test graphics, consisting of solid black squares, black gradients and color bars. All tests were done in the Windows 95 environment, using the drivers provided by the manufacturers.

Speed: Reality Checks

Manufacturers often use different criteria to determine their machine's maximum-rated draft speed. What this means is one manufacturer may be using a test sheet with a few lines of text (4 lines), and another manufacturer's test sheet may have a few more lines. To even up the odds we took one average page from Microsoft Word (with text from top to bottom) and averaged the page per minute speed over three minutes. Consequently, our results are skewed by the manufacturers' draft range, but we feel that they more accurately represent the actual speed that will be achieved by the typical user under real-world conditions.

Cartridge Comparisons

One of the problems with earlier color ink-jet printers was the cartridges: many machines allowed the user to load either the black cartridge or the color cartridge, but not both at the same time. In fact, some ink-jet units 1992 to 1994 could only create "black" on a color page by overprinting all three primary colors to create a wet, mucky dark brown text. Thankfully, all of the models in this month's shootout accept black and color cartridges simultaneously.

This means fewer hassles for the user, with less cartridge switching between jobs. It also means more efficient color printing, as black text should come from the black cartridge instead of consuming substantially more color ink to achieve the same effect. And, of course, black is really black.

Another problem, which hasn't been entirely solved by any of the models in this month's test, is color bleeding, the approximation of a color, using available colors. Test bars on one of our test sheets feature a dark red solid center, surrounded by a diffused, lighter outside. Without exception, all of the printers represented the lighter color as darker because of the diffusing. The good news is that this didn't seem to affect most of the things we printed, the bulk being mostly photography and text. Similarly, unless the printer is to be used as a serious tool for graphic arts and desktop publishing, this shouldn't pose a major problem to the end user.

One Final Note:

Readers should be aware that the ink-jet printer product category is undergoing an astounding rate of new product introduction in 1998.

Epson has announced or will announce as fewer than 10 new ink-jet printer models this year, covering the spectrum from entry-level budget-priced models to high-end graphic arts print products. HP, Lexmark and Canon are also racing to replace their former best-selling models with much improved new ones. The quest for greater print speed, and to a lesser extent, lower cost of supplies, is driving a rapid turnover in the products available for sale. Be very wary about getting stuck with inventory of old printer models, as they may be hard to move, at any price, in comparison with the latest and greatest that the major manufacturers will have to offer.

As well, the major opportunity for profit, once the hardware sale is made, will continue to be in supplies. Retailers should be more cautious about carrying "off brand" ink cartridges, as they are about refilled laser printer toner cartridges. Ink-jet ink formulation is a much riskier business than laser-toner refilling. Check out any discount non-name-brand inkjet cartridge supplier very carefully before offering their products. When in doubt, you might do well to stick to the name brands.

Epson Stylus Color 800

Suggested Retail Price: \$679

Street Price: \$449

Epson is keeping up its high standards with the Stylus Color 800 model. With 128 nozzles for black ink, and 64 nozzles for each of the three colors, the 800 is able to provide a top resolution of 1,440 by 720 dpi. Text in both black and color is very crisp, and is virtually indistinguishable from laser or premium grade paper.

Color accuracy with the 800 was quite good, even on standard bond paper, although most colors printed a shade darker than the source graphics. Blacks were solid and black scaling was distinct. Using glossy photo-quality paper, the Epson shone, providing realistic photo-quality output with a minimum of blocky mosaic texture on solid colors.

Speed for high-quality output was average, at about two minutes per full sheet of text. The draft speed was reasonably good at five full pages per minute, but more impressive was the quality of draft output. Every 12 seconds or so, the 800 pumped out a sheet with good solid black text which would have been top-notch quality on earlier models.

At 18.7 by 24 by 12.4 inches, the 800 is one of the larger printers, and is quite sturdy. Cartridge and paper loading are both straightforward. And for Macintosh users, this printer is the only one with the Mac Serial II interface.

As a bonus, the 800 ships with the Epson Productivity Kit, which comes with a bundle of premium paper, Avery Label Pro 3.0 Software for Works/WE, Avery ScanDisk Project Camera, and the Epson Answer interactive CD ROM. The 800 is covered by a healthy two-year warranty.





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Canon BJC-500**Suggested Retail Price: \$329****Street Price: \$229**

Although Canon has a newer machine near the upper end of our specified price range, it wasn't scheduled for release before press date (instead we have the BJC-4300, which is listed above as the consumer with a tighter budget). The unit has a top resolution of 720 by 360 dpi for both black and color printing.

Like all of the other units, the BJC-500 supports both black and color cartridges at the same time. One slight concern with this unit is the quality of black monochrome print while using the combination black/color cartridge. Printing a combination of black and color text provides slightly better black quality. A single black cartridge is available for the 4300, which would provide better black text in monochrome mode.

With black cartridges running at \$32.90, and the complete color/black set running at \$44.15, it can become a bit expensive. It's also a bit of a hassle if the user has to continuously switch off cartridges to obtain optimum print quality. Luckily, the combination color/black cartridge is essentially the print head with two different consumers, which can be individually replaced for less cash, at \$12.30 for black and \$3.50 for the color container.

Color accuracy was reasonably good, with excellent reds and slightly dark blues. Black was a little spotty using the color cartridge, with almost no differentiation between shades of black. Color photographic reproduction was good, with a bit of spotting. Printing on glossy paper provided even better results.

On the down side, print speed was a bit slow, and black draft resolution suffered from the same problem as high-quality black because of the color cartridge. Once again, color draft printing was better.

The printer is rather compact, with the paper output tray sliding in neatly under the unit when not in use. The cartridge switching system is also quite nice, as opposed to software control or a two-device liaison; there's a dedicated "cartridge" button inside the loading area.

One feature of the BJC-4300 that sets it apart is the ability of the printer to be quickly converted into a 360 dpi form-feed scanner. The optional FS-31 scanner package has a scanning cartridge (which fits into the same spot as the regular ink cartridge), scanning software and carrier sheets. Created, dedicated flatbed scanners can now be purchased for \$200 or less, but if space is really at a premium on the desktop, this is a fairly inexpensive solution, at \$188 suggested retail (about \$150 on the street).

Although not a market leader in terms of print technology and speed, the BJC-4300 is extremely popular, and widely distributed as part of home PC bundles by a number of resellers. It is easy for even a novice PC user to set up and use, and its slower speed is only apparent when it is being operated next to a faster printer — not a typical situation in the average home PC setup.

The warranty period for the BJC-4300 is one year.

**Hewlett-Packard DeskJet 890Cxi****Suggested Retail Price: \$349**

Another one of the standard-bearers in the sub-\$400 printer field, Hewlett-Packard checks in with the DeskJet 890Cxi model. Listed as a "Professional" model, the unit's price is on the higher end of the scale for this roundup, but is still a viable choice for the personal or small office user.

Certainly, the 890Cxi has a lot going for it. Of all the units tested, it has the most accurate color reproduction. There was a patch of crimson on one of the test pages, but where most of the other units turned it into a muddily brown color, the HP reproduced it with no problem. All of the other colors were accurate as well.

Gray-scaling was handled well, providing distinct shading. One problem we ran into was print-head alignment on solid patches, which caused a striping effect on patches of black (and occasionally on larger patches of color), but not as noticeably.

Photographic reproduction was excellent, apart from minor striping, which mostly disappeared when using glossy paper. Text quality was also excellent, presenting near-laser-quality text with a minimum of bleeding.

With 6.3 pages per minute of high-quality black draft output, the HP is, without question, the speediest of the printers. Even at the highest-quality setting, it zipped through the sheet as a rapid-fire printer. If speed is an issue, this is certainly the printer to get. Unfortunately, the unit is also the heaviest of the bunch, with occasional load cracking and whining, which could be disastrous in a quiescent setting.

The warranty period for the DeskJet 890Cxi is one year.



Okidata OkiJet 2020**Suggested Retail Price** \$149**Street Price** \$279

The Okidata OkiJet 2020 is a bit of a good-news/bad-news situation, with the good thankfully outweighing the bad. Good news first.

Like the NEC and Canon models, the OkiJet is more for the budget-conscious consumer, costing in at under \$300. In addition to the complimentary copy of Broadband Print Shop, this compact and solidly built machine is backed up with a two-year warranty.

The secret part of the package, however, is the configuration of the print-head and cartridge system. With many printers, there is one black cartridge and one color cartridge. The problem is that the colors rarely get used in the same proportion, but the cartridges cause to function properly when any one of the colors run out. What this means is that when the cartridge runs out of cyan ink, users may be throwing out a nearly full selection of magenta, or yellow. The OkiJet uses the approach of splitting the three colors into separate cartridges, and making the print-head easily accessible and removable for quick and efficient individual cartridge changes.

The OkiJet is also good at reproducing colors, although some of the shades come out a bit darker than the originals (a common problem, it seems). Black patches print nice and solid.

The bad news? The black patches print a bit too solidly. A grayscale test showed little distinction between each gradient from 90 per cent through 99 per cent black coverage. What this means is good copy text, but expect a lot of blackness in darker areas when printing photographs or graphics with subtle contrast variations. Color photographs looked okay, although there is certainly room for improvement in this area.

The second problem is the speed. The OkiJet is the slowest of the bunch, clocking in at a very slow two pages of black text per minute in draft, and taking up to 30 minutes for a full page of full color.

The last problem is one of compatibility. The OkiJet software drivers were a bit picky about the environment the printer was running in; the printer didn't work properly until all other printer drivers were removed from the system. For most home users, this shouldn't pose too much of a problem, but for users who want to have more than one printer installed at the same time, it could cause a few headaches.

That said, the printer is a good low-cost alternative, as long as subtle shades of grey aren't a major concern to the user. With the longer two-year warranty, and the ability to replace individual colors instead of the whole color cartridge (and consequently at a lower cost to users who use more cyan than magenta, for example), certain users may end up much better ahead with this unit.



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Street Price: \$295

May '99

Although reasonably new to the sub-jet market, NEC comes in solidly with the sleek-looking SuperScript 750C, which is a great choice for the budget-conscious user. At 600 by 600 dpi, the machine doesn't have the best resolution of the machines tested, nor is the 750C particularly speedy.

However, coming in at about half the price of the higher-end printers in this lab, a bit of a trade-off in these areas is to be expected.

Text quality was generally good, but began to fail at smaller font sizes. This was especially true on lower quality paper, where it produced a lot of speckling on both black and color text. Full-color photo-quality printing produced speckling and blocky areas in places, although use of glossy photo-quality paper produced much better results. Color accuracy was fair to good, generally coming in a bit darker than the source material.

Solid black and grayscale graphics were handled surprisingly well. Part of the reason for this could be the cartridge configuration. Rather than a black cartridge and a second three-color cartridge, the 750C adds a "graphic black" to the color cartridge, which helps to better blend the color with the regular black.

Speed was generally good on high-quality jobs, but the draft was a bit disappointing. Color came in at 2 ppm, but black only came in at a slightly faster 3 ppm. This wouldn't be quite so disappointing if the quality of the draft were better; while other units provided fairly good-quality draft, the 750C's draft just appeared more like dot-matrix output.

The unit is at the middle of the weight range, but has a pretty large footprint at 18.11 by 16.56 by 9.29 inches. It appears a bit more fragile than most of the other printers — users with small children should beware, especially of the slightly flimsy feeding door on top. (See photo.) The visual interface uses on the outside of that door for setting up the unit and installing cartridges are baffling, but thankfully also appear in an understandable text form in the manual!

If the 750C's low price isn't enough to grab the customer, the printer also comes with the Broadcast Print Shop CD-ROM, a Sesame Street Art Workshop CD-ROM, and an NEC Media Sampler Pak.

The SuperScript 750C is backed up by a one-year warranty.



Lexmark 3700



Suggested Street Price: \$409

Street Price: \$399

May '99

Lexmark raises the resolution bar a bit with the 3700, offering a full 1,200 dpi in both directions.

This means a coverage capability of 1.44 million dots per square inch, as opposed to 1.04 million from Epson's stylus 400.

In addition, the 3700 features a nifty little innovation in the paper feeding mechanism, which automatically adjusts for overly thick paper, without manual intervention.

Another nice feature of the 3700 is the size of the unit. While not as big, the paper-receiving tray slides right onto the underside of the machine, bringing it to less than eight inches deep. When desk space is at a premium, this becomes a huge plus for such a high-quality printer. And at just over-and-a-half pounds, it's the lightest of the pack.

Despite that, the 3700 isn't a lightweight when it comes to print quality. Both black and color text are extremely sharp, even in very small font sizes. Except for very minor bleeding when printing on plain bond paper, the quality is comparable with a laser printer. Draft speed is quite good, and draft quality is excellent.

Color accuracy was good, although difference between grayscale gradations was only fair. Photographic reproduction was very good with the black and color cartridges, although there were blocky sections in areas with solid coloring. Switching black with the optional photo cartridge improved this even further, providing the best photo-quality reproduction of the batch of printers.

Considering the performance of the machine, the 3700 price tag is even more impressive. The package also includes the Lexmark Workshop CD-ROM, which has photo editing software, greeting card and T-shirt creation software, and more.

The big drawback: At nearly \$300 a quick, the ink cartridges are expensive when it comes time to replace them. The good news is that they last a long time (over one year) as we printed out quite a few full-color pages and the ink levels changed only marginally during that time).

The 3700 comes with a one-year warranty.

Tips & Tricks

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Ink-Jet Printers

Canon BJC-5000	Epson Stylus 800	Hewlett-Packard P2000
Bubble jet	Micro Bubble	Thermal ink jet
720 x 360	1,440 x 720	600 x 1200 black, 300 x 1200 color
84 black, 34 color	100 black, 100 color	300 black, 100 color
3	7	5
1.2	5	4
3.4	8	9
3	5	6.5
4	4	4
1 color, 1 black (in printhead)	1 color, 1 black	1 color, 1 black
WxDxL, in	WxDxL, in, MT, Min	WxDxL, in, MT
Parallel	Parallel, Min	Parallel
3.5	14.5	14.5
15.6 x 10 x 8.5	16.2 x 24.0 x 12.4	17.5 x 15.6 x 8.5
45 dB(A)	45 dB(A)	50 dB(A)
yes	yes	yes
800	800	
5200	5400	5540
84/25 composite (320/50 black / 200/25 color photo (for color, individual ink containers 12/50 black / 525 color)	827/89 black / 104/29 color	340/55 black (in box) / 340/55 color
User	2 years	2 years
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LAB TEST



May '98



May '98

Lexmark 5700

NEC SuperScript 750C

OkiData Okidata 2120



Thermal ink-jet

1,200 x 1,200

200 black, 152 color

4

35

8

55

up to 6

Bubble-jet

600 x 600

65 black, 67 color

2

2

8

3

5

Thermal ink-jet

600 x 600

48 black, 72 color

1

1

4

2

4

1 color, 1 black

Win 3.1, 95, NT

Parallel

1 color, 1 black

Win 3.1, 95

Parallel

1 black, 1 cyan, 1 magenta, 1 yellow

Win 3.1, 95, DOS

Parallel

85

170 x 88 x 60

47 dB(A)

16

18.11 x 15.39 x 9.29

49 dB(A)

19

18.37 x 11.76 x 7.82

46 dB(A)

yes

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\$17.99 black / \$45.99 color /
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Editors' Choice

One important thing we realized after conducting the tests: Every single one of these machines provides rather impressive results, and differences between each model's output are, in large part, subjective. All of the printers produce photographic results that are approachable. That said, the following are our picks:

Price/Performance

NEC SuperScript 750C

For the budget-minded buyer, the NEC goes the road for ease-of-use, color reproduction and good-quality black text at highest-quality output.

Overall

Lexmark 5700

For the combination of sharpest text and best photo-quality, Lexmark edges out the Epson, especially with its compact size and lower price tag.

Who Will Save Desktop Publishing

By Geoff Whetstone

The traditional developers of desktop publishing software are seeing unrelenting competition from entry-level packages, word processors and Web design tools. Positioning is the name of the game.

Desktop publishing, with what seemed to be

Paul Brainerd, the founder of Aldus Corp. (which originally produced PageMaker before Aldus was sold to Adobe), used to say desktop publishing was the application that "saved the Macintosh" back in the mid-1980s.

These days, however, it has more than enough work to do in saving itself.

It's an ironic state of affairs. Desktop publishing has actually come full circle from its humble origins — and completely changed the software industry in the process. What started out as a specialist application that appealed to a small, esthetician breed of creative users mushroomed into something that could be used as a publication design tool by millions.

Market Shifts

Just when desktop publishing was starting to gain huge popularity as the best tool for creating professional-looking publications, two things happened. The first was that word-processing software began to take on many of the features typically found in desktop publishing applications — including, for example, the ability to handle tables, flow text around graphics and print text in columns. The second major catalyst from the success of desktop publishing was that a second tier of "entry-level" applications emerged and accounted up more of the volume in the market. While many would argue that this consumer-style product was actually a key element of the market from the outset of desktop publishing, there is no doubt that basic, easy-to-use, sub-\$100 tools such as Microsoft Publisher have captured the lion's share

of the publishing applications market by unit volume.

With the recent launch of Publisher 98 and Microsoft Office 97 Small Business Edition Version 2.0 (which includes Publisher 98), Microsoft Canada's general manager Simon Watt says this trend is likely only to accelerate. Microsoft is now focusing more of its energy on winning the hearts and minds of small businesses, a segment in which he admits Microsoft has not been as successful as he would like. "The bit we haven't done is gotten to the end-customer and direct demand," he said. "We need to rely on our reseller relationships and drive [our message] down to customers."

The Web Factor

Desktop publishing vendors have also had another major market force to contend with — the advent of the World Wide Web. Increasingly, many small businesses are using the Web as a vehicle for "electronic" versions of flyers, newsletters and brochures, and desktop publishing applications are not necessarily the tools they use to accomplish this. Web design applications are likely to sweep up some of the market that would otherwise have gone to desktop publishing software.

A recent report by International Data Corp. clearly illustrates the strength of this trend. At the end of March, IDC released a report suggesting that the tremendous growth surrounding the Web — specifically the number of sites created and the number of users accessing those sites — has resulted in "a dynamic high growth opportunity" for Web authoring and design software.

According to the report, Web authoring and design resources worldwide will reach more than US\$250 million by 1992. IDC foresees that the Windows market for Web authoring products will increase at a compounded annual growth rate of 32.6 per cent for unit shipments worldwide between 1991 and 1992.

"Publishing content on the Web continues to explode and is increasingly becoming more complex as companies grow number of," said Joann Carol Brightman, a research manager in IDC's Internet program. "Because standards such as HTML prevail, vendors are finding more creative ways to compete aside from pure features through ease of use, added peripheral features, such as ISP hosting partners for Web sites, and application interfaces."

The IDC study further suggested that products such as NetObjects' Team Pages are addressing the needs of the group while MacroMedia's DreamWeaver and Collage's CyberStudio are targeting the creative designer. NetObjects is also striving to become the dominant tool-and-for Web application development, stated the report.

The IDC study revealed just how much of a shift in the vendor leadership "packing order" the change is producing. "Microsoft has played a visible role in shaping the general landscape. Many companies have felt the aggressiveness of Microsoft, much more the

company releases a new beta version of FrontPage," concluded the report. "Additionally, as the company continues to bundle FrontPage with the NT server product [IDC found 30 percent of NT server customers are active users of FrontPage], Microsoft's market share grows significantly."

The study also suggested that some traditional desktop publishing companies have misguided this market and are suffering, for it. "Regardless of Microsoft, these have been some serious take-overs in this market, including Interleaf's purchased CyberLeaf product and Quark's Interleaf, which missed the HTML compatibility mark," stated the report.

This has left the "heavy hitters" in the computer-based publishing sector looking for new ways to attract users — either by adding features, changing their product positioning or becoming more specialized. Quark is a perfect example of that. For years, Quark was happy to take lots of money from an enthusiastic band of QuarkXpress users running their software on Apple Macintosh systems.

But in the last year or two, all that has begun to change. Not only

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has Quark ventured into Web publishing territory with applications such as Interedit, but it has also made a much bigger commitment to the Windows market and expanded into networked and "workflow" applications.

Quark Does Windows

The commitment to Windows is a significant change for Quark, which has traditionally made the Mac its flagship platform — leaving Windows users of Quark products sometimes complaining that their implementations had been "cobbled together" after the Mac product.

In mid-March, Quark and Microsoft announced what they called "a strategic alliance" where Quark will adopt Microsoft technology as the reference platform for future Quark technologies. The companies have said that the mutual support will be manifested in three major relationships: technology, business development, and joint sales and marketing.

"Our strategy is to focus on technology that anticipates our customers' needs, and that helps them meet the needs of their customers as well," explained Susan Friedman, Quark vice-president of product management. "The publishing industry is changing rapidly. Microsoft provides the most extensible, robust platforms for application development that will enable us to continue to deliver the innovative solutions our customers need."

Quark is thus joining the many ranks of Microsoft Certified Software Providers, meaning that Quark will be able to take advantage of enhancements in future versions of Microsoft operating systems and servers, plus technical briefings and support. As a result, Quark has



also committed to

architecting its systems on Microsoft's COM and DCOM technologies and participating in alpha and beta programs to ensure its products are certified for Microsoft BackOffice and Windows.

The company seemed to be aware that this news might not go down well with its Macintosh users and was careful to issue a statement designed to allay fears: "Quark's recently announced alliance with Microsoft in no way lessens our commitment to supporting our desktop publishing applications for the Mac OS," said Quark in a statement. "The alliance is a logical result of our expansion into the client/server solutions arena, in which Windows NT plays a major role. Contrary to (irregular) speculation, we are not dropping the operating system and the group of customers that have made Quark so successful in the past. We are simply anticipating the technologically complicated needs of new markets and taking the steps necessary now to meet those needs when the time comes. The alliance in no way reduces a billion of support for QuarkXPress, QPS, and InDesign for the Mac OS." (See box.)

Of course, Canada's biggest participant is Corel Corp., which produces both CorelDraw and Ventura Publisher (formerly owned by Xerox Corp.). In fact, Corel announced a new version of Ventura Publisher in mid-March that is designed to be easier to use, better for publishing Web sites and providing improved integration with other Corel products.

And now Adobe seems to have come out the best in all this, recently producing honed-up versions of products such as PageMill and Photoshop, which have successfully blended the ability to produce professional-looking paper publications with a strong capability to handle Web site design.

In short, these are challenging days for the world's desktop publishing players. It would appear, however, that with some nimble moves to support popular industry platforms (such as the Web and Windows 95) and enough enhancements to keep its core of Mac-based users happy, all the major players will likely survive beyond the millennium. ID

Contacts:

Adobe Systems Inc. — (408) 356-6000

Corel Corp. — 1-800-772-6733

Quark Inc. — (800) 894-5888

Greg Westbrook is a Vancouver-based journalist who specializes in high-technology reporting. He can be reached at gwest@vancouver.com.

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Viruses and Revitalization: Symantec in 1998

by Jeff Evans



Virus News

One area where Symantec remains strong is in anti-virus software. As a key element in developing its world-class lead in the anti-virus market, Symantec's BART anti-virus family is one of the most active and advanced anti-virus research operations in the world. Symantec's investment in in-house research capability has resulted in a strong continuing market share for the Norton Anti-Virus line.

SANE has recently concentrated on tracking new varieties of many viruses, using sophisticated heuristic "scanning" software to identify potential virus code. According to SANE, a large majority of new virus reports received by SANE involve newer viruses, over though there are far larger numbers of older virus types, such as boot-sector and polymorphic viruses in existence compared to the older more varied.

Many viruses spread rapidly over LANs and via the Internet, where they are hosted inside legitimate and舞毒性的Word and Excel files. They are relatively easy to program, especially to older types of viruses. Also, according to BART, viruses can develop spontaneously—for example, when regular viruses are randomly corrupted by power failures in the system they are being saved in, or through other, poorly understood means. These randomly generated "new" viruses only enter in Office 95 applications. Office 97 has a feature that seems to ensure files are left to function. As well as this new form of virus "mutation," some macro viruses are known as "rewriting," according to Symantec. One macro virus rewriting its code like an already infected macro can enable code to create a third, different virus. However viruses are replicating, Symantec sees no major or serious business opportunity in the virus market, unless Microsoft decides to put a full-featured virus checker into its operating system.

If that happens, Eubanks cautions Symantec would need to go to the courts to try to retain their traditional market, or other vendors have recently done.

Symantec, the Cupertino, Calif.-based publisher of popular Windows and Mac programs such as the ACT! contact manager, Norton Anti-Virus, WinFax Pro and Norton Utilities, expects 1998 to be a banner year, due to a flurry of new product introductions, especially those related in one way or another to the Internet.

Symantec first gained profitability through its ownership of Norton Utilities (NU), a package of software which made the early versions of Microsoft DOS and later Microsoft Windows, much more usable. Norton Utilities' mix of file management, data recovery and system tools were a godsend to early PC users struggling with the gaps in the basic MS operating systems.

More recently, Symantec purchased Onsite's Defense Corp., the publisher of WinFax Pro, the market-leading PC fax software. Then, for a couple of years, the company seemed to have it's way somewhat. Improved new versions of Microsoft Windows contained at least basic versions of many of the utilities that made Norton Utilities so essential, and there were even basic fax functions in Windows from Windows 3.1 onwards. Symantec also came out with a Windows 95 version of WinFax Pro that contained major bugs, especially in terms of allowing connections between different kinds of modems and facsimile cards.

In 1996, however, Symantec seems to be in a better position to begin growing again. It has new, improved versions of ACT! (4.0), Norton Utilities, WinFax Pro, and Norton Anti-Virus, either in release or due shortly. It is fading, in fact, that Microsoft has perhaps unintentionally given the anti-virus products in particular, a fresh shot in the arm.

In a war of the Symantec Anti-Virus Research Centre (SARC) in Santa Monica, CCW now questions how Symantec succeeds and learns to combat the latest in computer viruses. Computer users around the world send in diskettes or even entire hard drives suspected of being infected with a computer virus. Anti-virus lab technicians analyze the data, and isolate suspected viruses. Standards

of new viruses are identified each month, most of them fairly minor variations of known variants. However, a relatively new category of viruses, called macro viruses, are getting special attention.

Closing The Gaps In Windows

In discussion with CCW, Symantec CEO Gordon Eubanks outlined the philosophy that has allowed Symantec to maintain a steady course in the often perilous Windows utility market. Right from the beginning, Eubanks says, Symantec was aware that as a utilities publisher, Symantec would always be at risk of nearly instant product obsolescence whenever the Apple Mac or Microsoft Windows operating system came out with new versions that added features that formerly required a third-party software program. For instance, when Microsoft added basic faxing capabilities to Windows, beginning with Windows for Workgroup 3.11, Symantec's WinFax Pro product, which had been a popular part of many PC hardware makers' software bundles, became much less valuable. In point of fact, though, the Microsoft fax software proved to have some bugs, and recently Symantec actually signed an agreement to license a basic-fax feature for utility in Microsoft's

Whenever Microsoft adds in new features that seem to compete with a Symantec utility, Symantec doesn't go head-to-head in competition against Microsoft, according to Eubanks. Instead, they follow one of several possible strategies:

- Close out of the product category.
- Develop, and use highly targeted product, attractive to professionals and other power users while conceding the entry-level market to Microsoft's "free" version. This has been the approach with the Norton Utilities and Norton Anti-Virus products.
- Find other software publishing opportunities, and either buy or develop entirely new products. ■

Jeff Evans is Associate Editor of Canadian Computer Wholesaler. He is based in Toronto and can be reached at jev@repscan.ca.

Are you currently in your own business as a seller? If not, have you ever been tempted to buy a business?

About 25 per cent of the small business population entered the wild and woolly world of entrepreneurship through that door. Maybe you want to get into an established business for the first time. Possibly you want to expand or diversify your existing business by buying another.

Whatever your motivation, when searching for a business, there are a number of classic warning signs that should alert you to potential problems. Buying the wrong business could result in a financial disaster.

Here are some common warning signs of which you should be aware:

Unfamiliar business?

It would be a serious mistake for any buyer to invest in a business that the buyer knows nothing about. The dangers in running the enterprise are accentuated by inexperience and unfamiliarity. If you are the potential buyer, you could be buying a business totally alienated to your professional talents or interests. You would be in a considerable disadvantage in trying to survive and compete with your competitors.

Partner-needed business?

Some business partnerships that are based on sound economic data can work out well and may be worthy of your consideration. On the other hand, many business partnerships do not survive in the long run. This could be because of conflicts of personality, philosophy, policy, programs, or contributions of money, time, or skill sets the business. Some sensible and understandable business operations attempt to "defend" the treasury investor by obtaining an injection of funds into the business and then using those funds in an inappropriate fashion without any controls. For example, investment funds could be used for paying past creditors' debts rather than for working capital for future needs and growth. Be cautious of any business partnership that promises a disproportionate return based on the investment of money or time.

Business which uses up all investment capital?

If you are considering a business that would require all of your financial resources to pay the purchase price, you could be in a situation that you are starting off undercapitalized, without working capital or reserves for future needs. For example, if you take over a business and there is a decline in sales and profit during the transition phase, you would not have any resources to be able to buffer the financial crunch. Never buy a business without taking into account prior working capital and contingency fund.

High pressure to buy?

If you are experiencing a situation in which the seller or an agent of the seller is putting considerable pressure on you to buy the business, run and be wary. Possibly the seller is ready to go under or is threat-

porous to sell for some other negative reason. For example, competitor opening up nearby. Possibly the agent is eager to make a commission or the listing will soon run out. Never put yourself in a situation where you have to make a quick decision on something so vital as buying a business.

Emotionally based interest?

If you are considering a business that you have a very positive emotional feeling for, and that feeling tends to dominate the decisions you are making, don't proceed any further. Emotional over-enthusiasm, unrealistic expectations, overly inflated projections and excessive optimism can quickly turn into a financial disaster. A business that you buy has to make objective good business sense first, in terms of being a viable idea at a price that you can afford.

Owner claims cash-eliminated?

A business owner may try to induce a sale by claiming that the financial resources do not accurately record the actual amount of cash that has come into the business. The seller could claim directly (and obviously not in writing), that half of the cash is pocketed without recording or paying tax on it. Don't purchase such a business. The situation would mean that you couldn't rely at all on the financial records, which places you at high risk. In addition, you cannot base your purchase price off the assurance of the seller that they avoided taxes. Obviously the seller is not credible and consequently the business is not credible enough to consider any further.

Falling or distressed business?

Don't proceed any further if you are considering a business that is going through serious financial problems. The exception would be if you are an expert in that type of business, have clearly identified the reasons for the financial difficulties, and know that you have the expertise and management resources to turn it around. There are people who buy businesses with a turnaround strategy in mind, and skillfully negotiate a purchase package that is very attractive. This can be done effectively of course, only if the buyer knows what they are doing and is sophisticated in this type of distress purchase.

Remember, before you decide on any business, check it out thoroughly. Ask lots of questions, comparison shop, be objective (not emotional), and speak to others in the industry. Finally, get professional analysis, feedback and advice from a sound-sense accountant and business lawyer. **DR**

Douglas Gray, LL.B., formerly a practicing lawyer is a Mississauga-based consultant, speaker and author of 16 best selling books, including *The Complete Canadian Small Business Guide*, published by McGraw-Hill Ryerson.

RISKY



By Doug Gray

BUSINESS

What are the warning signs to avoid buying into a bad company?

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Interrupt, without apology!

Microsoft's new PC99 standard hopes to address the issue of limited interrupts, but what's taking so long?

by Alan Zisman



Oh where, oh where have you interrupt gone?

Sort of like you look for mice, whenever any of the devices attached to the computer need to get some attention from the CPU, they have to interrupt it. Unlike our children, they can only do that if they have an interrupt request (IRQ) number. It gives them the ability to beat in on the CPU's time.

Part of the appeal of the PC-style computer is its upgradability. So far, non-upgradeable versions have been released from time to time (and are under discussion yet again) as one way to lower corporate computing's Total Cost of Ownership (TCO), but have never attained mass-market acceptance. However, in order to be able to easily add hardware to a PC, there need to be available IRQs. Otherwise, the new devices can yell for attention all they want, but the CPU will never hear them. In other words, they won't work.

The original IBM PC and XT offered a mere eight interrupts, most

of which went hand-in-hand for key devices such as the keyboard and the floppy disk drive. In 1984, IBM doubled the number to 16 with its AT model. And that's where we've stayed ever since. During these 14 years, processor speeds have gone from 8MHz to 333MHz, and hard drives have grown from the AT's original 10MB to nearly 100GB.

It used to be that a typical new PC had somewhere between three and five free interrupts, but those numbers have been slowly whittled down as options come more fully equipped. You may be shopping for buying a system with empty slots (particularly in more and more functions come integrated right onto the motherboards), but unless you have five IRQs, these slots are useless. And some of today's fancy adapters require two interrupts each!

Ironically, while the Macintosh started life as the proverbial sealed box, lacking expansion ports, the adoption of Industry SCSI in 1986's Mac Plus has proven a wise choice. SCSI allows relatively easy addition of up to six devices and when implemented on a PC, these devices all share a single interrupt. But aside from a few areas such as high-end network servers, SCSI has never really caught on as a PC solution, where the added cost and complexity of SCSI hampered its adoption.

There have been other recent proposals to get around IRQ-limiting. Like Universal Serial Bus, which allows connection of up to 256 devices sharing a single external USB bus. Presumably, we could be seeing keyboards, mice, sound cards and scanners all using a single interrupt. But USB still hasn't caught on, though most modern motherboards are shipping with at least the possibility of adding a USB port. We'll see if the upcoming release of Windows 98, with built-in USB support, provides this technology its long-needed jump-start.

The villain in this scenario is the AT's now-antiquated ISA bus. Even when the system's not using any ISA cards, on today's motherboards the keyboard, the parallel and serial ports, hard drive and display controllers are all connected to the ISA bus, along with other functions built into the motherboard.

Last year, when Microsoft released its PC-98 specifications, it boldly called for the demise of the ISA bus. But even though Microsoft has lacked the power to impose its will on the classic PC industry. At the recent seventh annual Win96C (Hardware Engineering Conference), Microsoft again attempted to set standards, this time presenting a trial version of recommendations for PC99, realistically aimed for implementation in Year 2000 models. In the meantime, implementation of the PC98 proposals is finally seeing an end to the ISA bus and the shortage of IRQs have been proposed, yet again.

Take a good look at the system you're buying, using, or distributing. Use the Win95 Device Manager (or even the old DOS MSD utility), and check how many IRQs are in use, how many are free for new devices. Be prepared — it's a question that your more aware customers may very well be asking you. But who has the courage to be the first to release a PC without a 1984 legacy ISA bus?

Alan Zisman is a computer journalist and teacher, living in Vancouver. He can be reached at azisman@vix.net.

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The Fine Line Between Promotion and Spam

"Automatically generated e-mail has its dangers," he cautions. "Send too much, send it more than once, or send it to the wrong parties, and you may be accused — or guilty — of spamming."

by Greene Bennett



Promotion is an evolving art. As those of us who something to sell look toward the future, the Internet looks like an area of ever-growing importance. And, with its emerging role as the e-commerce market-place, we have work to do to set up our shops, refine our banners and get the message out there.

E-mail

One of the key ways Internet contacts can be established is, of course, via electronic mail. According to a recent study reported on [News.com](http://www.com), e-mail has emerged as the number one method of customer-vendor contact, and many suppliers are profitably drawing under the ever-expanding airtight of e-mail.

At any rate, the real likelihood is that, sooner or later, you are going to need to improve your ability to efficiently respond to e-mail information requests. Here at Canada Computer Paper Inc., as you might imagine, we get an awful lot of e-mail, so we've had to deal with these issues. Some of the ways we've found for managing requests for information include having "bots" that automatically provide information on certain topics. You could, for example, set up a "bot" to automatically send a price-list or a product specification sheet to a request sent to an e-mail address like "info@yourcompany.com." For maximum efficiency, provide several e-mail addresses on your Web site, where visitors can categorize their response, depending on, for example, the relation to sales, info, technical help or a problem with the Web site.

You can use a "bot" to thank people for writing, to let them know that their letter has been received and that it will be read. (At Canada Computer Paper Inc., we use the FireCheat Internet Server from Meridian, Our-based SoftArc as our primary e-mail sys-

tem, although similar capabilities are available in a wide array of other products.) Remember, however, that "bot" is no substitute for a personal reply. Although the bot provides an immediate response to let people know their message made it through and that it is appreciated, such responses ring hollow unless you then follow up with a real human reply.

Automatically generated e-mail has its dangers, of course. Send too much, send it more than once, or send it to the wrong parties, and you may be accused — or guilty — of spamming. In general, we recommend providing a pre-checked checkbox on your request-for-information Web page that allows the people who use it to decide whether they would like to receive future product information or updates or promotional offers from you. If they agree, their names can be added to a mailing list, electronic or otherwise.

Walking The Line

Sometimes, the line between promotion and spam gets just a hair too fine, as Apple Computer Inc. discovered after the release of its QuickTime 3.0 software for Macs and 32-bit Windows PCs. QuickTime 3.0, you see, comes with its license agreement that requires a key for developers who include QuickTime with their products to send a hefty US\$1 per copy licensing fee. The catch is, developers that want to avoid this onerous fee must call an API that copies a promotional movie to the end-user's desktop every time he or she uses the product. In other words, it is futile to delete this virus-like file — it reappears next time you run the program unless the user pays US\$30 to upgrade to "QuickTime Pro." This "desktop spam" concept, while clever, is undoubtedly maddening the set of developers and users alike. I only hope that it doesn't catch on.

Can you imagine what a painful mess (not to mention the tech support nightmare) we'd have if everybody started doing that?

Just think of the how Microsoft would take if it pulled a move like this.

For more info on QuickTime 3.0 and its new capabilities, see the article at <http://www.apple.com/mediaworks>.

Fishing For Hits

Another popular way to draw business to your Web site is via the inclusion of what are known as "meta tags" embedded into the HTML code that defines the page. Some of today's more sophisticated Web-authoring tools are database-driven and these tools can generate these lists of meta tags automatically. Even if you add the tags manually, you are reversing the likelihood that a customer looking for the product or service you offer will find your page near the top of the list of results displayed by a search engine.

There are dangers here too. For example, as is probably pretty obvious, sex-related sites often stuff thousands of meta tags on a wide array of mighty words into their meta tag lists (and, as a disturbing trend, a growing number of porn sites with unrelated words that happen to be common generalized search topics, as well). However, you shouldn't go appropriating the trademarks of others in your meta tag list. Playboy Enterprises is using one such ploy, which was fishing for hits with tags like "Playmate," "Playboy" and so on. To be double, we'd recommend legal advice.

Meta tags were discussed in depth in a recent article appearing in *The Computer Paper* (<http://www.computerpaper.ca/wholesaler>). There is an alternative to search engines that can bring visitors to your site — and usually the right kind of visitors, too. It's called a webring. Find out more at <http://www.webring.org>.

Greene Bennett is the Editorial Director for Canada Computer Paper Inc., and a former computer retailer. He can be reached at greene@tpca.ca.



Okidata adds 20-ppm printer

Okidata of Massachusetts, Ont., has introduced the OkiPage 20 Series, including a 20-ppm printer with standard duplex printing.

Printing starts at \$1,999, and all the printers are driven by a 40MHz RISC processor. They come standard with a 50-sheet input tray and a 100-sheet paper feeder. The products are supported by a five-year warranty on the LED print-head, and a one-year on-site limited warranty on parts and labor.

Okidata can be reached at (905) 238-4750.



IBM Corp. rolls out new line of high-speed systems

IBM Corp. has announced systems to take advantage of Intel's latest 350MHz and 400MHz Pentium II chips. IBM introduced its new line of Windows NT Workstation M Pro "personal workstations," which can run up to two 400MHz Pentium II processors. The new Workstations also incorporate new manageability and security features, including IBM Asset ID, Alert On LAN, and LANChase Control Manager (LCCM) 2.0. Intel/Windows M Pro models start at a suggested price of \$5,275.

IBM also announced a new ultra-light ThinkPad 600 multimedia notebook that weighs less than five pounds (about 5.5 pounds with removable CD-ROM drive), at a price ranging from around \$4,500 to \$8,500, depending on configuration.

IBM has moved into the 19-inch monitor market, starting at a suggested list price of \$1,116 for the C94 model. And the company announced a price reduction in its network components, with the entry-level model 180 now priced at about \$700.

IBM Canada Ltd. has expanded its Aptiva Series of PCs with the addition of the Aptiva E36, E56 and E86, priced at \$2,398, \$3,448 and \$3,048, respectively.

The E86 includes:

DVD technology. The E36 and E56 have 256KB Level 2 cache, 266MHz and 300MHz AMD K6 processors, 48MB or 64MB RAM, 4GB hard drives, a 32X CD-ROM drive and a K56 Flex modem. The Aptiva E86 includes a 300MHz



Intel Pentium II processor, 64MB of RAM, a 8GB drive, 512KB Level 2 cache, a DVD-ROM II drive, a K56 Flex modem, and a variety of multimedia features.

All sales include the World Book Multimedia Encyclopedia CD-ROM, and 90 hours or 90 days of free Internet access.

Visit <http://www.ibm.com/ca/aptiva>.

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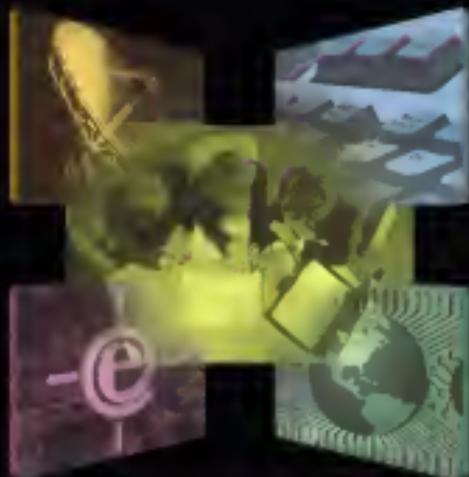
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Tech Data Canada gets new president

Rick Reid started this month as the new president at Mississauga, Ont.-based Tech Data Canada. Reid was most recently senior vice-president of SHL Systemhouse Inc.

"This is an exciting transition to what I've been doing," said Reid, in an interview prior to starting the job. "It's a great company, with a lot of opportunity."

Reid said he wouldn't talk about specific plans for his new job at this time. He said current issues being distributor, strategic partner, presence, and enrollment vendor support for the channel.

Reid is replacing Eli Levy, who completes a three-year international assignment and returns to the Tech Data Corp. corporate office in Clearwater, Fla. Reid said Levy had a "fantastic job" at adding sales and growing the business.

Reid has more than 23 years of experience in the Canadian computer industry, including stints at Unisys Canada Inc. and Cromwell Business Centers Inc.

Cancom has new chief

CSB — Canadian Satellite Communications Inc. (Cancom) has promoted Duncan McEvitt to the post of president and chief executive.

McEvitt, formerly Cancom's vice-president of business development, replaces Alan Goud.

McEvitt said in a teleconference with industry analysts and reporters that he plans to review Cancom's strategic business plan over the next few weeks and look for opportunities for further improvement, but, he added, "I am inheriting a mandate that is very strong." McEvitt said his long-term goal will be to continue to build shareholder value in Cancom but that "for the time being, I'm very much here to listen."

McEvitt was also named to the company's board of directors, as was Robert Martin, a director of WIC Western International Communications Ltd.

Archer names vice-president

Archer Enterprise Systems Inc., a Toronto developer of sales force automation software, has named Sean Wedde as vice-president, research and development.

He is responsible for the technical development of the organization's sales force automation software products and services. Wedde has 22 years of industry experience. Prior to co-founding Archer with Rick McCutcheon in 1988, he held positions with Northern Telecom, IBM Canada Ltd., Microsoft Canada Inc., Syntexis Corp. and AT&T Canada Inc.

In January, he was appointed to the executive board of the Association of Microsoft Solution Providers and has been a member of the Syntexis Amt! Certified Consultants advisory board.

Mersel president resigns

Robert McElroy has resigned as president and chief operating officer of Mersel Inc.

"I've enjoyed the past year with Mersel," said McElroy in a statement. "And I've been impressed with and proud of the progress that the company has made. However, relocating from the East Coast to the West Coast has not been an easy transition. As a result, I have made the decision to return to my family and my home in New York. Mersel's management team is strong and talented, and I have no doubt that they will continue to build on the momentum that Mersel has gained."

Chief executive Dwight Stellansen will assume the role of president, and Mersel's executive vice-president and chief financial officer James Hibbs will take responsibility for Mersel operations as executive vice-president of operations and finance, retaining the title of CFO.

The company also announced that vice-president of finance Dorothy Jensen has been appointed to the role of senior vice-president of finance, overseeing all of Mersel's financial operations, including financial strategy, planning and analysis.

Vice-president of North American operations, Ricky Stephens, was appointed as senior vice-president of North American operations, overseeing all aspects of Mersel's distribution, configuration and channel assembly, returns, customer service and traffic for the United States and Canada. **BB**



Sean Wedde

Calendar

May 5-7

Convergence '98

Calgary

<http://www.convergence98.com>

May 13-18

neuMedia '98

Toronto

Digital Multimedia Trade Shows Inc.

<http://www.neumedia.ca>

May 14-16

Understanding

May 20-23, June 4-5

Computer

Networking

Calgary

July 26-27 — Calgary

Global Knowledge

Aug. 10-11 — Montreal

Networks

<http://pm.globalknowledge.com>

May 19-22

GT EXPO

Toronto

<http://www.gtexpo.com>

June 14-17

Comdex/Spring

Atlanta

<http://www.comdex.com>

June 18-19

ITI Problem

Management

Practices

Toronto

Contact: Pink Elephant

<http://www.pinkelephant.com>

July 8-10

Comdex/Canada

Toronto

<http://www.comdex.com>

Sept. 8-9

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Do you have an upcoming event you'd like to see listed in CCA's Calendar? E-mail: ccw@optonline.net

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Nominations will be evaluated by a panel of Editors from Canadian Computer Wholesaler and Canadian Computer Paper Inc. The winners will be featured in a special July 1998 issue. Nominations close May 15, 1998.

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Report from Bramham

Services Industry Is Growing

by Leslie Arrand and Margery Leach

The Canadian IT professional services industry has developed a strong presence both within Canada and in international markets. This industry showed significant growth in 1997, demonstrating that the market is still very much alive for systems integration, custom application development, IT education and training, and IT consulting.

The Bramham500 database, which tracks the top 50 independent Canadian professional services companies based on annual revenues, indicates that the top 50 Canadian professional services organizations collectively generated \$1.3 billion during 1997. That represents a 21 per cent increase over the \$1.4 billion generated in 1996.

Furthermore, these top 50 companies are responsible for employing more than 34,500 people worldwide.

Some of the Canadian industry's key players are such globally known entities as



Deloitte & Touche, EDS Group, PROCOM, Andersen Consulting and The CGI Group. CGI holds the number one position, reporting revenues of \$223 million in 1997.

The top services companies are relatively mature, with 40 of the top 50 companies established prior to 1980. In contrast with the software industry, this sector of the IT industry is not prone to public trading, with 82 per

cent of the top 50 companies being privately held. Intense competition has created a changing face for the sector, which is characterized by a high degree of industry consolidation. This past year has seen some major mergers and acquisitions take place within the top professional services companies worldwide, such as Coopers and Lybrand merging with Price Waterhouse and Ernst & Young merging with KPMG.

In Canada, the CGI Group Inc. has maintained an acquisition-based growth strategy as witnessed by its purchases of CDSE, Canada Ltd. and Bell Syntex.

The professional services industry is expected to continue to play an important role, despite the apparent increasing sophistication of users. Year 2000 conversion issues alone have taught us that technology has touched almost every aspect of our lives, and our dependence on the experts is likely to continue. \square

Leslie Arrand and Margery Leach are consultants of The Bramham Group Inc. in Ottawa (<http://www.bramham.ca>) — an international marketing and management consulting firm with a stated commitment to "Delivering competitive advantage to the IT industry." Please (613) 743-2288 or fax (613) 743-4999.

Reader Poll

Last Issue, we asked:

We asked you to predict the most likely scenario in the handheld market a year from now.

You said:

28% 3Com's Palm platform will be by far the leader in the category, in terms of revenue and unit share.

30% Windows CE handhelds will come into their own in the next year, and market acceptance will happen in a big way.

9% Some other next-generation handheld product will emerge and will be on its way to capturing the market.

32% Handhelds will be a fairly insignificant market category.

This Issue:

Our Lab Test (page 48) reviewed a number of ink jet printers on the market. But we'd like to hear about your experiences with selling ink jet products to your customers.

Our question to you:

When it comes to YOUR customers, which is the higher priority criteria for their ink jet purchases?

- Quality of black printing
- Quality of color printing
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- Price of the printer

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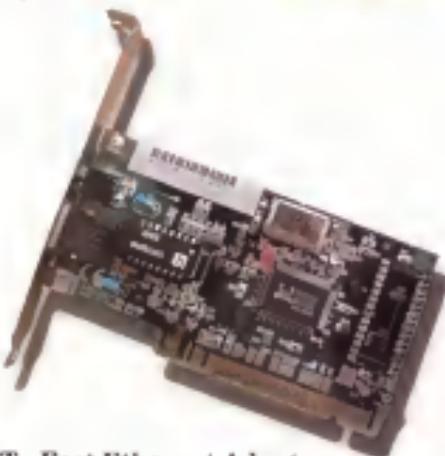


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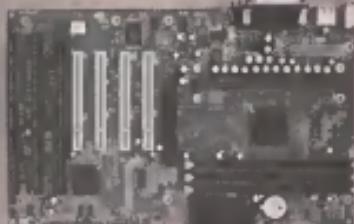
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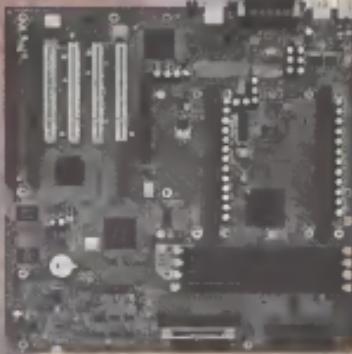
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- LM80 monitors 2 fans' speeds, 6 power supply voltages, chassis intrusion, mainboard temperature
- MAXIM 1617 monitor the temperature of CPU (option)



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- Supports Security Mode (Disable power button, reset button and keyboard input until password accepted)
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